pcMAINFRAME™ and Across the Boards®

Communications Device Drivers

Across the Boards® Release 3.35

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Introduction

This manual describes the configuration and usage of the many communications devices supported by *Across the Boards* and *pcMAINFRAME*. This manual consists of eight major sections:

1. Device Driver List
2. Across the Boards Memory Sizes
3. General Information
4. Device Driver Configuration and Usage
5. General Configuration and Usage Information
6. MAINCON Device Configuration
7. Miscellaneous Topics
8. Device Index

General information of various sorts is included in Sections 1, 2, 3 and 7.

When configuring a device driver for use with a specific device, information from Sections 4, 5 and 6 may be of use, as well as the Device Index.

If you are unsure of which device driver to use, use the Device Index or the Device Driver List to find the correct device driver. Once the device driver has been determined, specific configuration and usage notes will be found in Section 4, Device Driver Configuration and Usage. At the beginning of each driver subsection is a reference to the MAINCON configuration panel used to configure that driver. A description of that MAINCON configuration panel can be found in Section 6, MAINCON Device Configuration.

Section 1 - Device Driver List

Device Driver Name	Notes	ATB dvc#	DIALOG dev(name)	Description
CFXASNC	(1-Y)	0	---	Async (pcMAINFRAME Version 1.x-3.x only)
CFXIRMA	(1345-H)	1	IRM	Irma/Irma2/Irma3
CFXPCOX	(12)	2	PCO	PCOX/CXI
CFXPC3X	(1)	3	327	IBM 3270PC/Workstation
CFXFORT	(1345-H)	4	FOR	Forte
CFXIDEX	(12)	5	IDE	IDEA Card
CFXITTX	(12)	6	ITT	ITT
CFXIBMX	(1345-H)	7	IBM	IBM 3278/9 CUT Mode
CFXASTX	(12)	8	AST	AST Remote
CFXPROX	(134J)	9	PRO/3101	IBM 3101 Protocol Converter
CFXMPLS	(12)	10	MIC	MicroPlus
CFXPATH	(12)	11	PAT	Pathway/ICOT Remote
CFXSPEC	(Y)	12	SPE	Special
CFXLV3X	(12)	13	LEV/API	IBM Level 3.0 (PSAPI)
CFXHLLX	(12)	14	ENT/HLLAPI	ENT/HLLAPI DOS HLLAPI (IBM Level 1.0)
CFX525X	(12)	15	525	5250 - IBM
CFXDECX	(134)	16	VT1/DEC	DEC VT100 Protocol Converter
CFX232X	(13-Y)	17	PC2	PC to PC RS232
CFX525A	(12)	19	52A	5250 - AST
CFXVINX	(12)	20	BAN/VIN	Banyan VINES
CFXTTYX	(1)	21	TTY	Async TTY
CFXTYMX	(134)	22	TYM	Tymnet78
CFXDFTX	(124-S)	23	DFT	cfDFT
CFX400X	(12)	24	AS4	PC Support AS/400
CFXEXTW	(3)	25	EXT	Attachmate for Windows/NetWare 3270 LAN Professional
CFXIRMW	(3)	26	IRW	Irma Workstation for Windows
CFXCMGX	(4)	27	CMG	OS/2 EE Communications Manager
CFXDFTX	(124-S)	28	DFT	cfDFT without SF Support
CFXRUMB	(3)	29	RUM	Rumba for Windows
CFXEICO	(3)	30	EIC	Eicon for Windows
CFXIBMW	(3)	31	IBW	IBM Personal Communications Version 2.x/3.x/4.x for Windows
CFXXIRC	(13)	32	XIR	Xircom Pocket 3270
CFX220X	(345-H)	33	VT2	VT 220 Driver
CFXDYNC	(3)	34	DYN	Dynacomm Elite for Windows
CFXLWPW	(3-S)	35	TN3LWPW	TN3270 LAN Workplace non-SF
CFXLWPW	(3-S)	36	TN3LWPW	TN3270 LAN Workplace
CFXNFSW	(3-S)	37	TN3NFSW	TN3270 PC/NFS non-SF
CFXNFSW	(3-S)	38	TN3NFSW	TN3270 PC/NFS
CFXT3NW	(3-S)	39	TN3NEWT	TN3270 Newt/Chameleon non-SF
CFXT3NW	(3-S)	40	TN3NEWT	TN3270 Newt/Chameleon
CFXT3WS	(3-S)	41	TN3WSOK	TN3270 Windows Sockets non-SF

Device Driver Name	Notes	ATB dvc#	DIALOG dev(name)	Description
CFXT3WS	(3-S)	42	TN3WSOK	TN3270 Windows Sockets
CFXT3FT	(3-S)	43	TN3FTP	TN3270 FTP PC/TCP non-SF
CFXT3FT	(3-S)	44	TN3FTP	TN3270 FTP PC/TCP
CFXT2LW	(3)	45	TN2LWPW	Telnet VT220 LAN Workplace
CFXT2NF	(3)	46	TN2NFSW	Telnet VT220 PC/NFS
CFXT2NW	(3)	47	TN2NEWT	Telnet VT220 Newt/Chameleon
CFXT2WS	(3)	48	TN2WSOK	Telnet VT220 Windows Sockets
CFXT2FT	(3)	49	TN2FTP	Telnet VT220 FTP PC/TCP
CFXNVLW	(3)	50	NVLW	Novell LAN Workstation/Win
CFXDN22	(3)	51	DN220	DECNET/Pathworks VT220
CFXWHLL	(3)	52	WHLL	Windows WOSA HLLAPI
CFXOMNW	(3)	53	OMNIW	ICOT Omnipath for Windows
CFXIBWS	(3)	55	IBW-SF	Personal Communications for Windows, with SF support
CFX62DE	(3)	56	---	Dynacomm Elite LU6.2
CFXT3WS3	(5-S)	59	TN3WSOK3	TN3270 Win32 Sockets non-SF
CFXT3WS3	(5-S)	60	TN3WSOK3	TN3270 Win32 Sockets
CFXCMGS	(4)	61	CMG-SF	OS/2 EE Comm Mgr/SF
CFXEXTO	(4)	62	EXO	Extra! for OS/2 (not SF!)
CFXT3IO	(4-S)	65	TN3IBMO	TN3270 IBM TCP/IP/OS2 non-SF
CFXT3IO	(4-S)	66	TN3IBMO	TN3270 IBM TCP/IP/OS2
CFXT3FO	(4-S)	67	TN3FTPO	TN3270 FTP PC/TCP/OS2 non-SF
CFXT3FO	(4-S)	68	TN3FTPO	TN3270 FTP/PC/TCP/OS2
CFXT3LO	(4-S)	69	TN3LWPO	TN3270 Novell LWP/OS2 non-SF
CFXT3LO	(4-S)	70	TN3LWPO	TN3270 Novell LWP/OS2
CFXWHLL3	(5)	75	WHLL3	Win32 WOSA HLLAPI
CFXRUMO	(4)	76	RMO	Rumba for OS/2 (not SF!)
CFX5253	(1)	79	525-ES3270	Special 5250 for S/36 & ES/3270
CFX147W	(3)	80	MT1472W	Memorex Telex 1472 for Windows
CFXIRMA3	(W)	81	NT-Irma	WOW Irma/Irma2/Irma3
CFXFORT3	(W)	82	NT-FORTE	WOW Forte
CFXIBMX3	(W)	83	NT-IBM	WOW IBM 3278/9 CUT Mode
CFXWHL5	(3)	84	WHLL-5250	Windows WOSA HLLAPI 5250
CFXRUMB3	(5)	85	NT-Rumba	Win32 Rumba for NT
CFXCMG5	(4)	86	CMG-5250	OS/2 Comm Mgr 5250
CFXT2IO	(4)	87	TN2IBMO	Telnet VT220 IBM TCP/IP/OS2
CFXT2FO	(4)	88	TN2FTPO	Telnet VT220 FTP/PC/TCP/OS2
CFXT2LO	(4)	89	TN2LWPO	Telnet VT220 Novell LWP/OS2
CFXNULL	(345)	90	NULL	Null Device
CFXRUM5	(3)	91	Rumba-5250	Rumba/Win16 HLLAPI 5250
CFXIRM5	(3)	92	Irma-5250	Irma/Win16 HLLAPI 5250
CFXT2WS3	(5)	93	TN2WSOK3	Telnet VT220 Win32 Sockets
CFX220X3	(W)	94	NT-VT220	WOW VT220 Async
CFXEXTW3	(5)	95	NT-Extra	Win32 Extra! for NT/95
CFX320X	(345-H)	102	VT320	VT 320 Driver
CFXT4LW	(3)	103	TN4LWPW	Telnet VT320 LAN Workplace
CFXT4NF	(3)	104	TN4NFSW	Telnet VT320 PC/NFS

Device Driver Name	Notes	ATB dvc#	DIALOG dev(name)	Description
CFXT4NW	(3)	105	TN4NEWT	Telnet VT320 Newt/Chameleon
CFXT4WS	(3)	106	TN4WSOK	Telnet VT320 Windows Sockets
CFXT4FT	(3)	107	TN4FTP	Telnet VT320 FTP PC/TCP
CFXT4IO	(4)	109	TN4IBMO	Telnet VT320 IBM TCP/IP/OS2
CFXT4FO	(4)	110	TN4FTPO	Telnet VT320 FTP/PC/TCP/OS2
CFXT4LO	(4)	111	TN4LWPO	Telnet VT320 Novell LWP/OS2
CFXT4WS3	(5)	112	TN4WSOK3	Telnet VT320 Win32 Sockets
CFX320X3	(W)	113	NT-VT320	WOW VT320 Async
CFXATLW	(3-D)	114	---	APPX/TCP LAN Workplace
CFXATNF	(3)	115	---	APPX/TCP PC/NFS
CFXATNW	(3)	116	---	APPX/TCP Newt/Chameleon
CFXATWS	(3-D)	117	---	APPX/TCP Windows Sockets
CFXATFT	(3)	118	---	APPX/TCP FTP PC/TCP
CFXATWS3	(5)	122	---	APPX/TCP Win32 Sockets
CFXNSEL3	(5)	123	NS-ELITE3	NS/Elite for Win32
CFXWRQI3	(5)	124	WRQI3	WRQ Reflection for IBM Win32
CFXIBMW3	(5)	126	NT-PCOM	Personal Communications for Win95/NT
CFXIBWS3	(5)	127	NT-PCOM-SF	Personal Comm for Win95/NT - SF
CFXRASW	(3-D)	129	---	Win16 RAS control driver
CFX62WC3	(5)	130	---	WinCPIC LU6.2 Win32
CFXATPP	(3-D)	131	ATCP-PPP	APPX/TCP cfPPP Driver
CFXATPPD	(6)	132	ATCP-PPPD	APPX/TCP cfPPP Driver (DOSX)
CFX62NS3	(5)	133	---	IBM Personal Communications LU6.2 Win32
CFX62EP3	(5)	134	---	Extra! Personal Client LU6.2 Win32
CFX62RU3	(5)	135	---	Rumba LU6.2 Win32
CFXATPP3	(5)	136	---	NT-ATCP-PPP APPX/TCP cfPPP Driver (Win32)
CFX62SS3	(5)	137	---	SNA Server APPC Driver (Win32)
CFX62IB3	(5)	138	---	IBM PCOM APPC Driver (Win32)
CFXT7WS3	(5-ST)	139	TN7WSOK3	TN3270 w/TN3287 Win32Sockets non-SF
CFXT7WS3	(5-ST)	140	TN7WSOK3	TN3270 w/TN3287 Win32Sockets
CFXT5WS3	(5)	141	TN5WSOK3	TN5250 Win32Sockets
CFXIBM53	(5)	143	NT-PCOM5	Personal Communications 5250 (Win32)
CFXCA403	(5-Z)	144	NT-CA400	Client Access/400 5250 (Win32)
CFXRUM53	(5)	145	NT-RUMB5	Rumba 5250 (Win32)
CFXPSPW3	(5)	146	NT-PASSPORT	Zephyr Passport 3270 (Win32)
CFXWSRF3	(5)	147	NT-WINSURF	ICOM WinSurf+ 3270 (Win32)
CFXBLUE3	(5)	148	NT-BLUES	NewHart Systems Blues (Win32)
CFXCFMP3	(5)	149	---	CFMP Driver for TPNS Handling

NOTES:

(1) An ATB/DOS driver named *.BIN exists.

(2) An ATB/Win16 driver named *.WBN exists.

(3) An ATB/Win16 driver named *.DLL exists.

(4) An ATB/OS2 driver named *.DLL exists.

(5) An ATB/Win32 driver named *3.DLL exists.

   NOTE: Unless note (T) is also specified, this driver can be loaded by ATB/Win16 via the CFXNTGT thunking module. *See Section 5.8 for additional information.* If a Win16 driver of the same driver also exists ("2" or "3"), the Win32 driver can be loaded via an alternate device name/number if note (H) is also specified.

(6) An ATB/DOS extended DOS driver named *.DLL exists.

(9) This driver number/name assigned to ATB/Unix and ATB/Mac implementations. (These drivers are not available as standard components. Contact cfSOFTWARE for additional information.)

(D) This ATB/Win16 driver can be loaded by ATB/DOS via the CFXVXDT/CFXVXDS mechanism. *See Section 5.13 for additional information.*

(H) When loaded by ATB/Win16, this ATB/Win32 driver must be referenced by another XAPI driver number or Dialog name. *See entries with note (W), and Section 5.8 for additional information.*

(S) This driver can support both structured field and non-SF modes of operation. A second XAPI device number is assigned for the alternate mode of operation.

(T) Unlike most ATB/Win32 drivers, this driver cannot be loaded by ATB/Win16 via the CFXNTGT thunking module.

(W) This XAPI driver number and Dialog name is used to access a Win32 driver normally assigned a different device number. *See entries with note (H), and Section 5.8 for additional information.*

(Y) Special use driver. Contact cfSOFTWARE for additional information.

(Z) Driver unavailable as of 02/01/00. Contact cfSOFTWARE for additional information.

1.1 pcMAINFRAME 3.x Device Codes

pcMAINFRAME Version 1.x - Version 3.x used a one character code to refer to various *Across the Boards* device drivers (ATB/DOS only). The assignments are shown below:

Device Driver Name	ATB dvc#	DIALOG dev(name)	pcMF3 ID	Description
CFXASNC.BIN	0	---	A	Async (pcMF Version 1.x-3.x only)
CFXIRMA.BIN	1	IRM	1	Irma/Irma2/Irma3
CFXPCOX.BIN	2	PCO	2	PCOX/CXI
CFXPC3X.BIN	3	327	3	IBM 3270PC/Workstation
CFXFORT.BIN	4	FOR	4	Forte
CFXIDEX.BIN	5	IDE	5	IDEA Card
CFXITTX.BIN	6	ITT	6	ITT
CFXIBMX.BIN	7	IBM	7	IBM 3278/9 CUT
CFXASTX.BIN	8	AST	8	AST Remote
CFXPROX.BIN	9	PRO/3101	C	IBM 3101 Protocol Converter
CFXMPLS.BIN	10	MIC	9	MicroPlus
CFXPATH.BIN	11	PAT	P	Pathway/ICOT Remote
CFXSPEC.BIN	12	SPE	X	Special
CFXLV3X.BIN	13	LEV/API	L	IBM Level 3.0 (PSAPI)
CFXHLLX.BIN	14	ENT/HLLAPI	H	DOS HLLAPI (IBM Level 1.0)
CFXDECX.BIN	16	VT1/DEC	V	DEC VT100 Protocol Converter
CFXVINX.BIN	20	BAN/VIN	B	Banyan VINES
CFXXIRC.BIN	32	XIR	I	Xircom Pocket 3270

Section 2 - Across the Boards Memory Sizes

Across the Boards Memory Overhead (as of 6/24/93)

The memory requirements are listed for the various possible combinations of *Across the Boards* modules. Note that for OS/2 and Windows the sizes of both the linked-in and DLL versions of *Across the Boards* are listed.

MS-DOS Linked Modules

CFXAPI	33,520
CFXAPI+CFXAPPX	60,368
CFXAPI+CFXDIAL	88,576
CFXAPI+CFXDIAL2	78,176
CFXAPI+CFXAPPX+CFXDIAL	109,136
CFXAPI+CFXAPPX+CFXDIAL2	98,736

OS/2 Linked Modules

CFXAPI	24,794
CFXAPI+CFXAPPX	51,287
CFXAPI+CFXDIAL	78,152
CFXAPI+CFXDIALW	49,990
CFXAPI+CFXAPPX+CFXDIAL	98,872
CFXAPI+CFXAPPX+CFXDIALW	76,998

OS/2 DLLs

CFXATBXX.DLL - CFXAPI	25,050
CFXATBAX.DLL - CFXAPI+CFXAPPX	51,994
CFXATBXD.DLL - CFXAPI+CFXDIAL	78,858
CFXATBXW.DLL - CFXAPI+CFXDIALW	50,698
CFXATBAD.DLL - CFXAPI+CFXAPPX+CFXDIAL	99,514
CFXATBAW.DLL - CFXAPI+CFXAPPX+CFXDIALW	77,642

Windows Linked Modules

CFXAPI	38,663
CFXAPI+CFXAPPX	65,582
CFXAPI+CFXDIALG	97,116
CFXAPI+CFXDIALW	63,635
CFXAPI+CFXAPPX+CFXDIALG	117,740
CFXAPI+CFXAPPX+CFXDIALW	90,547

Windows DLLs

CFXATBAD.DLL - CFXAPI+CFXAPPX+CFXDIALG	119,719
CFXATBXX.DLL - CFXAPI	40,839
CFXATBAX.DLL - CFXAPI+CFXAPPX	67,655
CFXATBXD.DLL - CFXAPI+CFXDIALG	99,191

Section 3 - General Information

General Device Support

The *Across the Boards* device-drivers that work through 3270 emulation all support the Model-2 devices with 24 lines of 80 columns (1920 byte buffers). Some drivers also support other 3270 Models (3, 4 and 5) and some support extended attribute bytes (EABs).

Configuration Program - MAINCON

MAINCON.EXE is provided to generate configuration files for the device drivers. This module is menu driven and fairly self-explanatory.

Some of the device drivers require MAINCON to be run in order to function properly. If the DRIVER does allow/require configuration, the MAINCON menu will list it.

Keyboard Layout for Manual Mode 3270 Emulation

Select entry A1 of the MAINCON menu to configure keyboard and video monitor usage. The entry allows you to assign key and Alt_, Ctrl_, and Shift_ key combinations as special 3270 keys (Enter, PF1-24, Clear, up/dn arrows, etc.). The default keyboard layout is that of Irma's E78.

3270 Controllers

IBM 3274 and 3276

Some of the older IBM 3274 controllers do not transmit the ASCII carat (^ hex 5E) character; they send a dash (hex 2D) instead. This causes APPX applications to get an error #221 ("DUPLICATE CHARACTER...") in PPX_MESSAGE at CONNECT time. To correct his problem use the MAINCON configuration program:

- select A1 (Video Monitor Mode ...)
- set the Keyboard Language field to "9"
- save the configuration via F10
- when using APPX, be certain that the configuration file produced, MAINCFG.VDT, is either in the current disk directory or in the directory pointed to by PPX_PATH.

As of 02/09/93, Configuration Support D Version 65.1 is the current microcode for the 3274.

IBM 3174

For 3174 Asynchronous Emulation Adapters (AEAs), see Section 5.1 Protocol Converter Special Considerations.

To use the IBM 3174 controller or any 3174 look-alike, you must customize the controller as follows:

FILE TRANSFER AID 125. Miscellaneous Feature Option

3270 Controllers (continued)

The FILE TRANSFER AID bit (.... .1..) must be ON. That means that hex 04 must be ORed to any other value desired for Feature 125.

NOTE: The new IBM 3174 Model 90R microcode B Version 2.0 has a bug that causes it NOT to honor the TRANSFER AID bit. You must apply patch PTR 9032 from IBM to fix this problem. The problem manifests itself as no data being transfered from the 3270 buffer to the mainframe -- only the AID key is sent to the host.

Even on 3174-90R microcode releases that *do* support the file-transfer-aid bit, it is *not* documented in any of the 90R documentation. The general 3174 manuals describe the option, but the 90R specific documentation describes the entire option 125 field as "Reserved, leave at default values" (0000 0000).

IBM 4700

The IBM 4700 controller used by banking systems appears to work the same as a 3274 for ATB purposes in many configurations. In some configurations, the 3174 equivalent of the "File-Transfer AID Bit" is not implemented. These 4700's will run with DIALOG, but APPX or any application that attempts to copy directly to the presentation space will fail.

It appears that at least one "standard" configuration on the 4700, while otherwise emulating a CUT 3174, requires *different* scan codes. A MAINSCAN.SC4 has been created and can be loaded by CFXIBMX, CFXIRMA, and CFXFORT drivers after 05/03/91. Specify "4" as the alternate keyboard scan code buffer suffix in MAINCON. The major symptom is CLEAR and other function keys not working in DIALOG.

Integrated Controller

The IBM 4361 mainframe's integrated controller may translate the character "{" (ASCII 7B hex and EBCIDC C0 hex) to hex 00. This can be fixed by zapping MAINCFG.VDT, changing the byte at +11 hex into the file from 7B to something like 5B ("[").

AT&T 6544

It seems that the AT&T 6544 is mistranslating or not sending certain data.

Memorex Telex Controllers

Memorex/Telex controllers have the equivalent of the 3174 File-Transfer-Aid bit. There is a global (default) setting, as well as a per-terminal configuration screen.

Non-English Controllers

Some controllers configured for languages other than English require that CUT mode devices send different keyboard scan codes. CFXIBMX, CFXIRMA, and CFXFORT drivers after 05/03/91 can use an alternate keyboard scan code table (a MAINSCAN.SC? file). Specify the suffix of the alternate keyboard scan code table in MAINCON. The major symptom is function keys not working or keys causing inappropriate actions or characters.

The following MAINSCAN.SC? files are available:

File Name	Suffix (used in Maincon)	Usage
MAINSCAN.SC4	4	4700 (see above)
MAINSCAN.SCS	S	Spanish controllers

Flicker

<u>CICS 1.7 XA MRO-ed terminals</u>

In CICS 1.7 XA with MRO-ed terminals, there is substantial flicker of the system wait X. This can cause the assumption of a completed message and free keyboard when in fact there is more data coming from the mainframe. A ZAP is available for the CUT mode modules: CFXIRMA, CFXFORTE, and CFXIBMX. Contact cfSOFTWARE if you think this problem has arisen.

Example ZAP

DEBUG CFXdddd.BIN	[where dddd is Irma/FORT/IBMX]
2- e ds:1A7	[enter as shown and press CR]
- xxxx:01A7 19.00	[replace 19 with 00 and press space bar]
- xxxx:01A8 00.02	[replace 00 with 02 and press CR]
- w	[press w to write .BIN file to disk]
- q	[quit debug]

Field Attributes

3270 Attributes	PC Color	PC Mono/B&W
normal unprotected	green	grey
normal protected	cyan	grey
bright unprotected	red	white
bright protected	white	white
dark (non-display)	(blank)	(blank)

5250 Attributes	PC Color	PC Mono/B&W
normal in/out	green	grey
normal column-separator	cyan	grey
bright in/out	red	white
bright column-separator	cyan	grey
dark (non-display)	(blank)	(blank)
underscore	(ignored)	(ignored)
reverse	(ignored)	(ignored)

VT100 Attributes	PC Color	PC Mono/B&W
normal	green	grey
reverse	cyan	grey
underscore	red	white
bold	white	grey
blink	white	grey
dark (non-display)	(blank)	(blank)

IBM 3101 Attributes	PC Color	PC Mono/B&W
normal unprotected	green	grey
normal protected	cyan	grey
bright unprotected	red	white
bright protected	white	grey
(any others)	green	grey
dark (non-display)	(blank)	(blank)

CICS Terminal Definition

A critical factor in the use of 3270 terminals is the size of the terminal I/O area. This is defined in the TIOAL parameter in the TCT entry or in the IOAREALEN parameter of the TYPTERM entry if RDO is used to define terminals.

If the device is non-SNA the value specified should be at least as large as the maximum message that will be sent to the device. For Model 5 devices, 4000 must be specified.

For SNA devices two parameters are specified, the chain size and the maximum size. The value 256,4000 would be appropriate for all devices.

We have encountered ATNI abends in cases where too small a TIOAL is specified.

Section 4 - Device Config.   Not Available Online

Section 5 - General Configuration and Usage Information

5.1 Protocol Converter 3101 and VT100 - Special Considerations

Converter Quirks

The following list must be considered a small fraction of the total selection of protocol converters. In addition, due to constant changes and RPQs to converter hardware and software for the same brand/model this quirk list may not be valid. Expect the worst.

IBM Series 1 (Yale ASCII Package)

- uses backspace (08 hex) as ENTER key
- no flow control (no XON/XOFF)
- loses data when overrun (CFXPROX auto-resend AID sometimes corrects)

IBM 7171

- channel attached (sends data to screen out of sequence) (may need DIALOG LINEDROP to disconnect)
- uses backspace (08 hex) as ENTER key
- no flow control on some models (no XON/XOFF)
- loses data when overrun (CFXPROX auto-resend AID sometimes corrects)
  (ROM chip update is available from IBM that allows 1500 byte blocks as of 01/88)
- if bytes are being dropped, try using KEYDELAY set to 50 millisecs

IBM 7626

- SNA only. Little box, a poor 4 line converter
- uses backspace (08 hex) as ENTER key
- no flow control (no XON/XOFF)
- loses data when overrun (CFXPROX auto-resend AID sometimes corrects)

IBM 3708

- should be configured with "medium" size buffer
- flow control is optional (not needed with medium/large size buffer). The 3708 should be configured to **not** send XOFF/XON pairs as punctuation of the data stream
- BEL issued for line errors (locks keyboard till RESET). If the 3708 is in file-transfer mode, this lock will not happen. Esc > to enter file-transfer mode and Esc < to turn it off

IBM 3174 with Async Adapter (up 32 lines)

- cannot configure buffer size
- has XON/XOFF flow control
- we have tested up to 19.2
- cannot upload effectively. Due to small input buffer size data transfer upload forces many many XOFFs

5.1 <u>Protocol Converter 3101 and VT100 (continued)</u>

<u>IBM AS/400 - VT100 protocol conversion</u>

The AS/400 places asterisks in column 80 from row 9 down to simulate terminal lights or some such thing. This disrupts data transfer.

> **NOTE**: To turn off this asterisking, send ESC ^W (hex 1B 17) from the PC to the AS/400 **before** doing any data transfer or APPX CONNECT COMTEX.
>
> - has only an 8 byte input buffer
> - is easily overrun
> - loses data when overrun (CFXPROX auto-resend AID sometimes corrects)
> - later releases of this converter solve some of the above

<u>Hydra</u>

Channel attached (sends data to screen out of sequence).

> **NOTE**: May have trouble with 9600 bps UPLOAD (losing data or Enter key). If so, run at 4800 bps or use a 2 millisecond KEYDELAY via MAINCON.
>
> **NOTE**: Has trouble with ASCII 7D hex '}' and 7B hex '{' Hydra fails to translate properly to EBCDIC:
>
> ASCII 7Dh **should** translate to EBCDIC x'D0' (zone-decimal -0).
> ASCII 7Bh **should** translate to EBCDIC x'C0' (zone-decimal +0).
>
> **The Fix:**
>
> The Hydra should already be set for device type IBM 3101 or VT100. Use the Ctrl_Y menu on Hydra to fix the XATE table.
>
> - PF1 (Esc a) cycle through commands till "DSPLY"
> - tab to 2nd field
> - PF1 cycle through commands to "XATE" ASCII to EBCDIC
> - press ENTER (CR) to show table
> - change at offset +7D from 7D to D0 at offset +7B from 7B to C0
> - PF2 (Esc b) to "LOAD"
> - press ENTER -- should load OK
> - PF1 in first field till "RESET"
> - tab to second field
> - PF1 in second field till "ALL"
> - press ENTER to reset all
>
> **NOTE**: The RESET ALL will cause all connected lines to DISCONNECT.

Sample Hydra control menu for fixing XATE table. Note change table at offset +7D from 7D to D0 and at offset +7B from 7B to C0: Hydra-II DSPLY XATE DFLT 4.51B, V=5.

The (SNA or non-SNA) Hydra may be set to place an asterisk at row 1 column 80 as a LOCK-X substitute. When the LOCK-X turns off, the asterisk is replaced with a space instead of the character originally overlaid by the asterisk. Naturally, this causes data transfer errors. This problem seems to be dependent on whether the Hydra is attached via BTAM or VTAM. It functioned correctly under BTAM and failed when the system was converted to VTAM. In comparing the traces, under BTAM the asterisk was replaced before the second send of the confirmation character was done.

5.1   Protocol Converter 3101 and VT100 (continued)

Under VTAM the confirmation send was done before the asterisk was replaced. It appeared that the asterisk was always replaced with a blank in both environments which should have caused a problem, but the trace sample was small and it may have been that the data byte was in fact always a blank.

To fix this problem:
- Bring up the Terminal Definition screen of the SNA Hydra
- Set the KLCK and VNL fields to hex FF to prevent the asterisk

NOTE: In some releases of Hydra software the VNL field is renamed as KUNL. It should be set to hex FF as well).

- firmware release for Hydra 5.08 is fine, but when file transfers are attempted with firmware 5.20, escape sequences get trashed at random intervals (characters lost), resulting in disconnect request, and timeout

NetLink

- assumes auto-wrap for the 3101 (when it sends CRLF, it means CRLF) configure (MAINCON) this converter with AUTO-WRAP **on**
- BEL and echo-back are out of sync making recovery from jam difficult
- slow

Kaufman

- fixed terminal type by port (hardware)
- purchased by AVATAR
- clean

PCI

- sends <WAIT> to upper left during system lock
- clean

IrmaLINE

- 3274 coax attached (sends data to screen out of sequence)
- sends cursor positioning (4 bytes) for each byte echoed
- uses line 24 as OIA
- slow

Avatar <VT100 only>

- 3274 coax attached
- The AVATAR does not support IBM 3101 terminal protocol. Therefore, it will not function with CFXPROX. It requires CFXDECX

Wall Data

- can be set for 3101 via configuration default or startup menu.
- OIA optionally on line 24
- XON/XOFF byte values configurable
- Keyboard totally configurable (requiring PROX_KEY_TABLE)
- Auto baud rate recognition (may require several blanks to be sent after "CONNECT" in order to make this recognition)

5.1 Protocol Converter 3101 and VT100 (continued)

Data Stream

- Works only with Data-Stream microcode versions above 2.0. (A ROM upgrade may be required)

Data Lynx

- **Do not** load TERMLYNX TSR software (grabs COMM port interrupt) or use program
  UNCLINK to cause TSR to release COMM port (program CLINK re-establishes it for TSR).
- otherwise works well as 3101

Micom

- channel attached (sends data to screen out of sequence) (may need DIALOG LINEDROP to
  disconnect)
- XON may be configured as end-of-message on some models (this should be changed to CR)
- 7400-74016 model cannot upload faster than 2400 baud. To use 9600 for both up/download set
  KEYDELAY in configuration to 4 millisecs
- download clean at speeds up to 9600 baud

Renex

- fast
- RTD model works. Uses Esc Esc sequences for native mode controls. For 3101 still uses
  EscEsc R for reset (but Esc L for clear).
- handles up to 9600 bps upload when channel attached

Lee Data

- Model 8010 allow upload at 9600
- works up/download at 2400bps -- no problems as 3101
- ^Z as clear key
- will pass { as data byte

CXT

- Not tested yet

Black Box

- Model A/C(3B) (ASCII to coax) required KEYDELAY of 50 millisecs to prevent losing data
  on upload. No flow control.
- Model ??? (370x connected) is reputed to be running OK somewhere

Carterphone

- to date, we have not gotten data transfer through this box

Simware's VT100 protocol converter

- Simware has mainframe software (VTAM, VM, etc) that functions as a protocol converter.

Rabbit VT100 protocol converter software

- runs as VT100 only (no 3101)
- runs on IBM RT under Unix using DFT coax connect to host and multiple serial inputs
- must configure for VT100 with AUTOWRAP = 2. The Rabbit software sends CRs and means
  just that -- CR

5.2 Configuring the Telnet TN3270 Drivers

MAINCON Configuration Panel: E1: "Telnet TN3270"

MAINCON Configuration Panel: E7: "Telnet TN3270 with TN3287"

Configuration of Telnet TN3270 Drivers

If MAINCON is not used to configure the Telnet TN3270 drivers, the driver will run as a basic (non-enhanced, non-SF) 3270 Model 2, with no TCP/IP trace and using the Telnet Well-Known-Port as the default (#23).

MAINCON can be used to configure the TN3270 drivers to support 3270 Models 2, 3, 4 and 5. If the host is capable of it, the enhanced 3270 support, which includes EABs and structured field support, can be configured by configuring the 3270 model as 2E, 3E, 4E or 5E. Enhanced 3270 support must be configured if structured field support is required (for example in APPX). If the driver is configured for enhanced 3270 support both the SF and non-SF APPX connections are available. Only the non-SF APPX session is available with basic 3270 support.

> **NOTE**: Most TN3270 hosts support the enhanced 3270 terminals.

MAINCON can be used to enable a trace of the TCP/IP activity between the driver and the host. Entering a trace size other than zero will enable the trace. The trace data is kept in a circular buffer and will be written when the driver is closed. A file called TCPTRAC.BUF will be produced in the current directory. The program TRACEFMT.EXE will format the TCPTRAC.BUF file.

MAINCON can also be used to alter the default destination port on the host. If nothing is entered, MAINCON will default to the Telnet Well-Known-Port (#23).

MAINCON can also be used to set "disconnect at denegotiate" mode. When enabled, this mode forces the Telnet session to disconnect whenever a host action that would normally only cause a drop to NVT mode occurs.

See Section 6.21 for additional TN3270 configuration options.

Operation of Telnet TN3270 Drivers

These drivers implement all TN3270 functions including NVT mode if the host does not support TN3270. A new MAINCON configuration panel exists to support these drivers. This allows the configuration of terminal type (3270 Models 2, 3, 4 or 5, with or without EABs and structured field support), the size of the internal trace buffer, and the default destination port address to use if the Telnet well-known-port is not being used.

When first opened, the drivers display an NVT screen with a message requesting entry of the host name or address. The NVT screen consists of one enterable line (at the bottom), and a scrolling message area above the enterable area. Model 3270 field attributes are emulated on the NVT screen by the driver. The OIA indicates if the driver is disconnected ("disc" at the beginning of the OIA), in NVT mode ("NVT") or in a TN3270 session ("TA#" for the LU-LU session or "TA?" for the SSCP-LU session).

Section 5.4. TCP/IP Host Names and Addresses describes the addresses that can be entered to connect to a host. In addition, when connecting to a TN3270E host, an LU name may be requested. This is done by coding the reqested LU name on the host name line after a colon.

> Example:
>
> CF370.CFSOFT.COM :LU2T0001 - Requests LU "LU2T0001"

The ApkTest key causes the driver to disconnect from the host and return to disconnected NVT mode.

In NVT mode, the ApkPF12 key functions as a "retrieve" key, and will redisplay recently entered items.

5.2   Configuring the Telnet TN3270 Drivers (continued)

Configuration of Telnet TN3287 Support

In addition to the TN3270 options described above, the "TN3270 with TN3287" drivers support several configuration options related to printer support. There is a second MAINCON configuration panel for the TN3287 driver which contains the additional options.

MAINCON can be used to alter the following behaviors: default print routing, when the printer session connects to the host, how a failure of the printer session is dealt with, whether or not the operator may specify a specific printer session to use (rather than the one associated with the operator's terminal by the host), how print output is formatted, operation of the local copy functions, and compensation for incorrect host (TN3270 server) behavior.

See Section 6.27 for additional TN3270/TN3287 configuration options.

TN3287 Operation

In most respects, the presence of the printer session is transparent to the base terminal session. The following differences exist:

There are six additional "keys" defined which have are processed by the TN3287 session.

DskTN3287_Enter:	Start print session (if not connected)
DskTN3287_Test	Drop printer session
DskTN3287_Cancel	Discard data in print buffers (SCS mode only)
DskTN3287_PA1/2	Send PA1/2 sequence to host (SCS mode only)
DskTN3287_ClosePrint:	Close printer output

The PA1, PA2 and Cancel keys replace the switches of the same name usually found on a 3270 printer. The Enter and Test keys will start and stop the printer session with the host (note that by default the printer session will automatically be started). The ClosePrint key closes the output file, and will release output for printing in environments where a print spooler is used (note that the driver automatically closes the print output file when the host indicates that the print job is complete, but the "EOJ" is not always signaled).

The OIA of the base terminal contains a printer status section, which may contain the following:

P-Off:	Printer session disabled by (local) application
P-Err:	Printer error occurred
P-Disc:	Printer not connected to host (DskTN3287_Enter to start)
P-Fail:	Printer tried to connected to host, but failed (DskTN3287_Enter to retry)
P-Conn:	Printer connecting to host
P-Rdy:	Printer connected to host, waiting for work
P-Busy:	Printer busy printing

NOTE: local copies (both host and operator initiated) do not, by default, require a host connection for the printer session. Operator initiated local copies require that the printer not be busy (host initiated local copies are queued if the printer is busy when the request is received).

5.2   Configuring the Telnet TN3270 Drivers (continued)

The ApkPrint base terminal key will initiate a local copy operation.

When the host name is entered, a specific printer LU may be requested. The syntax is:

> hostname [port] [:[luname][/prtluname]

Examples:

Request LU "LU2T0001" (with associated printer):

```
CF370.CFSOFT.COM :LU2T0001
```

Request LU "LU2T0001" with specific printer "LUPRT1"

```
CF370.CFSOFT.COM :LU2T0001/LUPRT1
```

Request any LU with printer "LUPRT1"

```
CF370.CFSOFT.COM :/LUPRT1
```

While printing is in progress, a "cancel" dialog box is displayed. Selecting "Cancel" will discard the current unit of output from the host. (The dialog box may be suppressed by the local application).

The WPCTL1 printer device control string is supported (XAPI function). The following fields of the WPCTL1 control string are active:

```
bEnable              - TRUE if printer is enabled
fPrint               - Print selection flags
    #define WPC_PSELDEFAULT    (0x0000)
    #define WPC_PSELMAINCON     (0x0001)  (treated as WPC_PSELDEFAULT)
    #define WPC_PSELSPECIFIC    (0x0002)
fDialogBox   - Dialog Box options
    #define WPC_USEDIALOGBOX    (0x0000)
    #define WPC_NODIALOGBOX     (0x0001)
fFontOpt     - Font options
    #define WPC_DEFAULTFONT     (0x0000)
    #define WPC_LOGFONT   (0x0001)
fEOJ             - EOJ control flags
    #define WPC_EOJIDLE   (0x0002)
IdleTimeout  - Print idle timeout
szDriver     - Print driver to select (2nd parameter of CreateDC)
lf               - Logical font structure
szCaption    - Caption for printer dialog boxes
```

See CFXCTLS.H for additional documentation on these fields.

5.3   Configuring the Telnet VT220 Drivers

MAINCON Configuration Panel: E2: "Telnet VT220"

MAINCON must be used to configure the Telnet VT220 drivers.

With the exception of the first panel, the MAINCON configuration for the Telnet VT220 drivers is identical to that of the async/serial VT220 driver. This *Section* describes only the differences in the Telnet VT220 configuration.

The following options are not present in the Telnet VT220 configuration: XON/XOFF character, Keystroke Delay, COMM port, Line Speed, Line Parity, Data Bits, and Stop Bits. Most of these are irrelevant to a Telnet connection (for example, Line Speed), while the others are replaced by Telnet internal functions (for example, flow control is handled by TCP and Telnet, and not the XON/XOFF mechanism).

The Autowrap, Reset After BELL, Flicker Check Time, and Half Duplex options provide the same functions as the async VT220 driver.

> **NOTE**: If Half Duplex is configured the driver will refuse any attempt by the host to enter Telnet full duplex mode.

The following new configuration options are added to the Telnet VT220 driver:

MAINCON can be used to enable a trace of the TCP/IP activity between the driver and the host. Entering a trace size other than zero (the default) will enable the trace. The trace data is kept in a circular buffer and will be written when the driver is closed. A file called TCPTRAC.BUF will be produced in the current working directory. The program TRACEFMT.EXE will format the TCPTRAC.BUF file.

MAINCON can be used to alter the default destination port on the host. If nothing is entered, MAINCON will default to the Telnet Well-Known-Port (#23).

MAINCON can also be used to force the driver to negotiate "Binary" mode. Binary mode prevents the host from interpreting the standard NVT control characters. Some hosts require this mode. This should usually be configured as "ASCII" (the default).

Operation of Telnet VT220 Drivers

These drivers implement all Telnet and VT220 functions including NVT mode. A new MAINCON configuration panel exists to support these drivers. This allows the configuration of VT220 options, the size of the internal trace buffer, the default destination port address to use if the Telnet well-known port is not being used, and whether or not the driver should negotiate binary mode.

When first opened, the drivers display an NVT screen with a message requesting entry of the host name or address. The NVT screen is a scrolling TTY-like display.

5.4   TCP/IP Host Names and Addresses

The Telnet drivers accept host names or addresses entered via the keystroke functions while in disconnected state or via the TELNETCON control string. This may be an IP "dotted-decimal" address or the name of the host to be resolved via the /etc/hosts file or the name service in use. Optionally the address or name may be followed by the TCP port number to connect to on the host. The default port is the well-known port for Telnet (port #23). The default port number may be changed in MAINCON.

Samples:

208.200.57.140	Connect to host at 208.200.57.140, port 23
CF370	Connect cf370 host, port 23
CF370.CFSOFT.COM 125	Connect to cf370.cfsoft.com host, port 125
208.200.56.81	Connect to host at 208.200.56.81, port 23

5.5   Multiple COMM Port and Modem Server Support in Across the Boards/DOS

MAINCON Configuration Panel: D1: "Comm Port Assignments"

Version 3.06 of *Across the Boards* adds support for multiple COMM ports (ports beyond COM1 and COM2) and NASI and INT 14 based modem servers (also known as async gateways). A new MAINCON configuration screen allows the configuration of COM1 through COM15. If no special configuration is entered for COM1 or COM2, the standard PC COM1 and COM2 ports are accessed. Accessing other COMM ports requires configuration.

Multiple COMM Port Support

Version 3.06 of *Across the Boards* includes support for async serial ports above "COM2". Prior versions were limited to either COM1 or COM2. To configure an extended serial port, the following steps are required:

1. As has been done in the past for serial communications, select option "D2", "D3", or "D4" from MAINCON's primary menu (for IBM 3101, VT100, or Tymnet78 support respectively).
2. The configuration screen for the chosen protocol converter will appear. For the "COMM port" specification, specify "3" to "15". Press F10 to write the configuration file; this will return you to the primary menu. (Alternatively, the COMM port may be specified at the XAPI open or in a DIALOG script).
3. Select option "Communication Port Assignment" from the primary menu (D1).
4. In the configuration line corresponding to "COM3" (or whichever port was configured in step 2), enter "COMM" in the TYPE field. You will be presented with two additional fields: "I/O Port", and "IRQ". The appropriate values for these fields vary by hardware configuration; a help screen may be obtained by pressing F1 which presents guidelines for configuration.

Enter the appropriate values in these fields, then press F10 to write the configuration file.

The configuration is then completed.

> **NOTE**: It is possible to alter the I/O port and interrupt assignments for COM1 and COM2, but this may lead to confusing configurations and is therefore not recommended (for example, the user could swap COM1 and COM2). If no special configuration is supplied for COM1 and COM2, the standard values will be used.

Configuring NASI (NetWare Async Services)

NASI based modem servers (available from Novell and numerous other vendors), use an INT 6B API.

Configuration for NASI is similar to the preceding example with the following exceptions:

1. The choice of COMM port is not significant (1-15 may be used).
2. On the "Communication Port Assignments" configuration screen, specify type "NASI" for the COMM port you have chosen.
3. You will then be prompted for "Name", which must be the resource name for the NASI server. Contact your LAN administrator for this information.

Configuring INT 14 Drivers

INT 14 based modem servers use a variant of the PC-BIOS INT 14 serial port API. Most vendors provide their own extensions to the BIOS INT 14 API. *Across the Boards* can be configured to take advantage of some of these dialects.

5.5   Multiple COMM Port and Modem Server Support (continued)

Configuration for INT 14 is similar to the preceding examples with the following exceptions:

1.   Again, the choice of COMM port is not significant (1-15 may be used).
2.   On the "Communication Port Assignments" configuration screen, specify type "INT14" for the COMM port you have chosen.
3.   You will then be prompted for a "Port" and a "Dialect". The Port will be the port number specified to the INT 14 interface. Usually the INT 14 redirector software (included with the modem server software) allows the configuration of a particular COMM port to redirect. This is the port number to configure here. The Dialect field should be set to a non-zero value if the INT 14 redirector software implements one of the supported dialects. The following dialects are currently supported:

   0 - Basic INT 14 API
   1 - Fresh Technology/Modem Assist

03/17/93. Reported a problem using MODEM_ASSIST Version 2.1. This new version is structured much differently than earlier versions we have tested. On the server, you run MSERVER; on the client, MCLIENT CONNECT.

The problem was that the user was running MCLIENT without the CONNECT parm. In this state, Modem Assist's test program, TERM, will run just fine but not the INT 14 interface.

   NOTE: This new release is not compatible with the old extended INT14 dialect 1 (configurable in MAINCON). Users of this release **must** run basic dialect (dialect 0).

5.6   VTAM/NCP Issues for Across the Boards

5.6.1   Buffer size problems in cfDFT and other structured field drivers

Environments generating SNA sense codes of X'800A' (in some drivers, especially cfDFT, reported as X'0A80'), may have a configuration problem in NCP or VTAM. The sense code is most often returned after an APPX send operation involving a large structured field. The error is an indication that the receiver (NCP or VTAM) was unable to handle the PIU, since it was too big. This can be verified by setting the APPX block size down to 1920, and retrying the connection. It should work.

The problem is in NCP, VTAM or in the destination LU (i.e., CICS). The LU with which the bind was negotiated has indicated an RU (PIU) size that one of the network components (e.g., VTAM or NCP) cannot handle. This may be corrected either in the destination LU (by reducing the RU size) or by increasing the allowed RU sizes in VTAM and/or NCP. Some of the VTAM and NCP parameters that may need to be changed are listed below:

> NCP
> MAXDATA
> MAXBFRU
> VTAM
> RACMLUBF (in ISTRACON)
> MAXBFRU

It is also possible to alter the MODETAB to specify a smaller RU size.

5.7   Windows NT CFXNTDD.SYS Installation

CFXIRMA3.DLL (device number 1), CFXIBMX3.DLL (#7) and CFXFORT3.DLL (#4) require that
CFXNTDD.SYS be installed.

> **NOTE**: Drivers 81, 82, 83 are synonyms for 1, 4, and 7.

Run the INSTNTDD.EXE installation program or use the following manual procedure:

5.7.1   Copy CFXNTDD.SYS to \WINNT\SYSTEM32\DRIVERS

5.7.2   Use REGINI to add the items in CFXNTDD.INI to the registry ("REGINI CFXNTDD.INI")

> **NOTE**: REGINI is available in either the SDK or the NT Resource Kit. It is assumed that the
> application's installation program will install the driver for the end-user.

5.7.3   Use the "Drivers" tool on the control panel to start "CfxNTdd"

5.7.4   You may wish to set "CfxNTdd" to manual startup

5.7.5   When using an Irma 2, Irma 3, Irma 3t

> If you are using an Irma 2, Irma 3, Irma 3t or one of the coax cards that requires a microcode load, and
> the vendor does not have an NT compatible microcode load program (DCA does not), you will need to
> load the microcode outside of NT, probably from a DOS boot diskette.

5.7.6   For *pcMAINFRAME* installations, program INSTNTGT.EXE must be run (once) to install
CFXNTDD.SYS

5.8 ATB/Win16 Applications under WOW (Windows-on-Windows) in Windows NT and in Windows 95

The WOW (Windows-on-Windows) environment of Windows NT provides the capability to run 16 bit Windows applications under Windows NT. WOW prevents many ATB/Win16 device drivers from running, either because they access hardware directly or invoke an unavailable API. In many cases CFXNTGT.DLL makes it possible to access the Windows NT driver instead of the Win16 driver, and thus provide access to a Windows NT emulator or a emulation card that does not provide an API to the WOW session.

Under Windows 95, direct access to hardware is not prevented, but it may be desirable to use an emulator's 32 bit API (instead of the 16 bit API, which may not be available in all cases). In many cases, CFXNTGT.DLL makes it possible to use the ATB/Win32 drivers from an ATB/Win16 application.

The use of an ATB/Win32 driver is mostly transparent to an ATB/Win16 application. When a Win32 driver is selected at XAPI open time, CFXNTGT.DLL is automatically loaded, and the Win32 driver is accessed transparently. In most cases the Win32 driver has a unique device name and number that does not conflict with any Win16 names. In some cases (drivers which access hardware or serial ports directly), the base Win32 driver name/number is the same as a Win16 driver name/number, and a synonym has been assigned to provide access to that driver for ATB/Win16 applications.

5.8 ATB/Win16 Applications under WOW (Windows-on-Windows) in Windows NT and in Windows 95 (continued)

ATB/Win32 Driver			Accessed in ATB/Win16 as		
Driver Name	**Dvc #**	**Dialog Name**	**Dvc #**	**Dialog Name**	**Description**
CFXIRMA3.DLL*	1	IRM	81*	NT-IRMA	WOW Irma/Irma2/Irma3
CFXFORT3.DLL*	4	FOR	82*	NT-FORTE	WOW Forte
CFXIBMX3.DLL*	7	IBM	83*	NT-IBM	WOW IBM 3278/9 CUT
CFX220X3.DLL*	33	VT220	94*	NT-VT220	WOW VT220 Async
CFXT3WS3.DLL	59	TN3WSOK3	59	TN3WSOK3	TN3270 Win32 Sockets non-SF
CFXT3WS3.DLL	60	TN3WSOK3	60	TN3WSOK3	TN3270 Win32 Sockets
CFXWHLL3.DLL	75	WHLL3	75	WHLL3	Win32 WOSA HLLAPI
CFXRUMB3.DLL	85	NT-RUMBA	85	NT-RUMBA	Win32 Rumba for NT
CFXT2WS3.DLL	93	TN2WSOK3	93	TN2WSOK3	Telnet VT220 Win32 Sockets
CFXEXTW3.DLL	95	NT-EXTRA	95	NT-EXTRA	Win32 Extra! for NT/95
CFX320X3.DLL*	102	VT320	113*	NT-VT320	WOW VT320 Async
CFXT4WS3.DLL	112	TN4WSOK3	112	TN4WSOK3	Telnet VT320 Win32 Sockets
CFXATWS3.DLL	122	---	122	---	APPX/TCP Win32 Sockets
CFXNSEL3.DLL	123	NS-ELITE3	123	NS-ELITE3	NS/Elite for Win32
CFXWRQI3.DLL	124	WRQI3	124	WRQI3	WRQ Reflection for IBM Win32
CFXSWFT3.DLL	125	SWIFT3	125	SWIFT3	NetManage Swift for Win32
CFXIBMW3.DLL	126	NT-PCOM	126	NT-PCOM	Personal Comm (Win32)
CFXIBWS3.DLL	127	NT-PCOM-SF	127	NT-PCOM-SF	Personal Comm (Win32) - SF
CFX62WC3.DLL	130	---	130	---	WinCPIC LU6.2 Win32
CFX62NS3.DLL	133	---	133	---	IBM Personal Comm LU6.2 Win32
CFX62EP3.DLL	134	---	134	---	Extra! LU6.2 Win32
CFX62RU3.DLL	135	---	135	---	Rumba LU6.2 Win32
CFXATPP3.DLL	136	NT-ATCP-PPP	136	NT-ATCP-PPP	APPX/TCP cfPPP Driver (Win32)
CFX62SS3.DLL	137	---	137	---	SNA Server APPC Driver (Win32)
CFX62IB3.DLL	138	---	138	---	IBM PCOM APPC Driver (Win32)
CFXT5WS3.DLL	141	TN5WSOK3	141	TN5WSOK3	TN5250 Win32Sockets
CFXIBM53.DLL	143	NT-PCOM5	143	NT-PCOM5	Personal Communications 5250 (Win32)
CFXCA403.DLL	144	NT-CA400	144	NT-CA400	Client Access/400 5250 (Win32)
CFXRUM53.DLL	145	NT-RUMB5	145	NT-RUMB5	Rumba 5250 (Win32)
CFXPSPW3.DLL	146	NT-PASSPORT	146	NT-PASSPORT	Zephyr Passport 3270 (Win32)
CFXWSRF3.DLL	147	NT-WINSURF	147	NT-WINSURF	ICOM WinSurf+ 3270 (Win32)
CFXBLUE3.DLL	148	NT-BLUES	148	NT-BLUES	NewHart Systems Blues Win32)
CFXCFMP3.DLL	149	---	149	---	CFMP Driver for TPNS Handling

***NOTE**: under ATB/Win16, this driver has a different DIALOG name and XAPI device number than under ATB/Win32.

See Sections 4.1, 4.4, 4.7, 4.33, 4.59, 4.60, 4.75, 4.81, 4.82, 4.83, 4.85, 4.93, 4.94, 4.95, 4.102, 4.112, 4.113, 4.122, 4.123, 4.124, 4.125, 4.126, 4.127, 4.130, 4.133, 4.134, 4.135, 4.136, 4.137, 4.138, 4.141, 4.143, 4.144, 4.145, 4.146, 4.147, 4.148, and 4.149 for more information.

5.9 Identifying HLLAPIs

While this document describes many of the existing Windows and OS/2 HLLAPIs, and the ATB/Win16, ATB/Win32, and ATB/OS2 drivers to use with them, in some cases the end-user is not sure which 3270 emulator they have installed, or they may have a 3270 emulator that we have not seen before. The various 3270 emulators load various named DLLs to provide their HLLAPI. The following list can be used to determine which *Across the Boards* drivers might work with the installed emulator by matching the DLL names from the emulator to the ATB/Win16, ATB/Win32 or ATB/OS2 driver name. Note that the set of HLLAPI DLL names overlaps between various emulators, and two emulators providing the same (name) HLLAPI DLL may or may not be actually providing the same API. Also, many emulators provide more than one HLLAPI DLL, and while in theory we should be able to support all of them, it is most probable that the native HLLAPI DLL will be the most stable, and best tested.

HLLAPI DLL name	ATB/Win16 Driver(s) using that name	
ACS3EHAP.DLL	CFXIRMW.DLL (#26)	- Irma Workstation for Windows
AHLLAPI.DLL%	CFXIRM5.DLL (#92)	- Irma/Win16 HLLAPI 5250
EEHLLAPI.DLL*	CFXRUMB.DLL (#29)	- Rumba for Windows
EEHLLAPI.DLL*%	CFXRUM5.DLL (#91)	- Rumba/Win16 HLLAPI 5250
EHLLAPI.DLL	CFXEICO.DLL (#30)	- Eicon for Windows
HLLAPI.DLL	CFXEXTW.DLL (#25)	- Attachmate for Windows
MMXTX.DLL	CFXDYNC.DLL (#34)	- Dynacomm Elite for Windows
OMNIHLL.DLL	CFXOMNW.DLL (#53)	- ICOT Omnipath for Windows
PCSHLL.DLL*	CFX147W.DLL (#80)	- Memorex Telex 1472 for Windows
PCSHLL.DLL*	CFXIBWS.DLL (#55)	- Personal Communications/Win (w/SF)
PCSHLL.DLL*	CFXIBMW.DLL (#31)	- Personal Communications for Windows
WHLLAPI.DLL*	CFXWHLL.DLL (#52)	- Windows WOSA HLLAPI
WHLLAPI.DLL*%	CFXWHL5.DLL (#84)	- Windows WOSA HLLAPI 5250
WSHLLAPI.DLL	CFXNVLW.DLL (#50)	- Novell LAN Workstation for Windows

HLLAPI DLL name	ATB/Win32 Driver(s) using that name	
EEHLLAPI.DLL*	CFXRUMB3.DLL (#85)	- Rumba Mainframe for Windows NT
EEHLLAPI.DLL*%	CFXRUM53.DLL (#145)	- Rumba 5250 (Win32)
EHLAPI32.DLL	CFXRUMB3.DLL (#85)	- Rumba Version 5.0 (Win32)
EHLAPI32.DLL*%	CFXRUM53.DLL (#145)	- Rumba 5250 (Win32)
EHLAPI32.DLL*	CFXEXTW3.DLL (#95)	- Extra for Win95/NT
HLLAPI32.DLL*	CFXBLUE3.DLL (#148)	- NewHart Systems Blues (Win32)
HLLAPI32.DLL*	CFXWRQI3.DLL (#124)	- WRQ Relection for IBM Win32
WHLL32.DLL	CFXSWFT3.DLL (#125)	- NetManage Swift for Win32
WHLLAPI.DLL*	CFXWHLL3.DLL (#75)	- Windows Win32 WOSA HLLAPI
WHLLAPI.DLL*	CFXNSEL3.DLL (#123)	- NS/Elite Plus Version 2.0 for Win32
PASSHLL.DLL	CFXPSPW3.DLL (#146)	- Zephyr Passport for Win32
PCSHLL32.DLL*	CFXIBMW3.DLL (#126)	- Personal Communications for 95/NT
PCSHLL32.DLL*	CFXIBWS3.DLL (#127)	- Personal Comm for Win95 - SF
PCSHLL32.DLL*%	CFXIBM53.DLL (#143)	- Personal Comm 5250 (Win32)
PCSHLL32.DLL*	CFXWSRF3.DLL (#147)	- ICOM WinSurf+ for Win32 (3270)

5.9   Identifying HLLAPIs (continued)

HLLAPI DLL name	ATB/OS2 Driver(s) using that name	
ACS3EHAP.DLL*	CFXCMGX.DLL (#27)	- OS/2 EE Communications Manager
ACS3EHAP.DLL*	CFXCMGS.DLL (#61)	- OS/2 EE Comm Mgr/SF
ACS3EHAP.DLL*	CFXEXTO.DLL (#62)	- Extra! for OS/2 (not SF!)
ACS3EHAP.DLL*%	CFXCMG5.DLL (#86)	- OS/2 Comm Mgr 5250
EEHLLAPI.DLL	CFXRUMO.DLL (#76)	- Rumba for OS/2 (not SF!)

*Duplicate HLLAPI DLL names. %5250 Driver

5.10   Configuring the APPX/TCP Drivers

MAINCON Configuration Panel: E5: "APPX/TCP"

MAINCON Configuration Panel: E6: "APPX/TCP - cfPPP"

MAINCON must be used to define at least one configuration record for APPX/TCP drivers to use. Each configuration record is used for one host connection and specifies various data about each connection. This is essentially identical in function to CPI-C (LU6.2) "Side Information".

For the APPX/TCP drivers essentially all of the data in the configuration record can be overriden with the APPX Connect-Info function. As with the LU6.2 drivers, if no Connect-Info call is made in the APPX application, or the Connect-Info call does not specify a record key, the default record (as defined in MAINCON) will be used. Any other fields specified in the Connect-Info call will override the corresponding MAINCON definitions. If no Connect-Info call is made, the default record is used, and the only override is the standard APPX transaction name specification.

MAINCON Parameters

Host Name	The DNS name or IP address of the host. For example, "cf370.cfs.com" or "193.1.1.201" or "193.1.1.201" **NOTE**: the current versions of the cfPPP drivers do not support name resolution and explicit host addresses must be used.
Port Number	The TCP port to which the APPX/TCP session will connect on the host. For CICS Listener host applications, this should be to port number specified when the Listener is brought up with "CSKE"
PGM	The host transaction program to run -- not used for APPX application as APPX requires that the transaction program name be specified on the APPX Connect or Connect-Info call **NOTE:** the transaction program name is case sensitive.
Connect Option	The type of connect process required by the host application: 1 - Basic TCP (none) 2 - CICS Listener compatible 3 - Format-3 Connect
Connect Data	Optional data sent during the connect process. Usage is dependent on the Connect Option selected: Connect Option 1 - Basic TCP (none): Connect Data is ignored Connect Option 2 - CICS Listener compatible: Connect Data is sent as the optional "Client-in-Data" as described in "IBM TCP/IP for MVS - CICS TCP/IP Socket Interface, Guide and Reference", SC31-7131, or in the *Across the Boards* APPX Documentation. *See "New Features and Updates for APPX", Section 16, "Configuring the cfSOFTWARE CICS Listener for TCP/IP for VSE."* Connect Option 3 - Format-3 Connect: The connect data provides "overrides" which are passed to an APPX Router to modify the host connection it will establish.

MAINCON can be used to enable a trace of the TCP/IP activity between the driver and the host. Entering a trace size other than zero will enable the trace. The trace data is kept in a circular buffer and will be written when the driver is closed. A file called TCPTRAC.BUF will be produced in the current working directory. The program TRACEFMT.EXE will format the TCPTRAC.BUF file.

5.11 <u>Configuring the Telnet VT320 Drivers</u>

MAINCON Configuration Panel: E4: "Telnet VT320"

MAINCON must be used to configure the Telnet VT320 drivers.

With the exception of the first panel, the MAINCON configuration for the Telnet VT320 drivers is identical to that of the async/serial VT320 driver. This *Section* describes only the differences in the Telnet VT320 configuration.

The following options are not present in the Telnet VT320 configuration: XON/XOFF character, Keystroke Delay, COMM port, Line Speed, Line Parity, Data Bits, and Stop Bits. Most of these are irrelevant to a Telnet connection (for example Line Speed), while the others are replaced by Telnet internal functions (for example, flow control is handled by TCP and Telnet, and not the XON/XOFF mechanism).

The Autowrap, Reset After BELL, Flicker Check Time, and Half Duplex options provide the same functions as the async VT320 driver.

> **NOTE**: If Half Duplex is configured, the driver will refuse any attempt by the host to enter Telnet full duplex mode.

The following new configuration options are added to the Telnet VT320 driver:

MAINCON can be used to enable a trace of the TCP/IP activity between the driver and the host. Entering a trace size other than zero (the default) will enable the trace. The trace data is kept in a circular buffer and will be written when the driver is closed. A file called TCPTRAC.BUF will be produced in the current working directory. The program TRACEFMT.EXE will format the TCPTRAC.BUF file.

MAINCON can be used to alter the default destination port on the host. If nothing is entered MAINCON will default to the Telnet Well-Known-Port (#23).

MAINCON can also be used to force the driver to negotiate "Binary" mode. Binary mode prevents the host from interpreting the standard NVT control characters. Some hosts require this mode. This should usually be configured as "ASCII" (the default).

Operation of Telnet VT320 Drivers

These drivers implement all Telnet and VT320 functions including NVT mode. A new MAINCON configuration panel exists to support these drivers. This allows the configuration of VT320 options, the size of the internal trace buffer, the default destination port address to use if the Telnet well-known-port is not being used, and whether or not the driver should negotiate binary mode.

When first opened, the drivers display an NVT screen with a message requesting entry of the host name or address. The NVT screen is a scrolling TTY-like display.

5.12   <u>DOS HLLAPI Passthroughs</u>

Numerous Windows, Windows NT/95 and OS/2 3270 emulators provide virtual device drivers which provide DOS applications access to the Windows emulator's HLLAPI via the traditional DOS HLLAPI (Interrupt 7F) interface (using CFXHLLX.BIN, driver #14).

While we strive to support these interfaces, there have been many problems, and performance is generally poor (often very poor). Accordingly we recommend that a Windows based application, using *Across the Boards* for Windows, be used rather than a DOS application.

If a DOS passthough HLLAPI must be used, insure the following:

- Ensure that only one 3270 emulator has been installed on the machine in question (including different releases of the same emulator). The presence of two HLLAPI interfaces, and two virtual device drivers almost invariably leads to problems (ranging from inconsistent results to total failure to connect).
- Ensure that the Windows emulator is up and running before the DOS **session** in which the DOS application is to be run is started. Many problems have been encountered initializing the DOS HLLAPI interface when this is not done.
- Do not depend on any "autostart" facilities in the emulator -- again, insure that the emulator is up and running before running the DOS application.
- Ensure that the DOS session is not set to exclusive execution and is enabled for background execution.
- If problems occur, try running the DOS session both windowed and full-screen.
- If performance is poor, try adjusting the DOS session execution priories to very low or very high values.
- Be sure to restart Windows after installing an emulator or making any configuration changes to the emulator before trying to use a DOS HLLAPI passthrough.
- If a configuration works, try to avoid changing it or applying patches or upgrades to the 3270 emulator. DOS HLLAPI passthrough stability has often varied from release to release and from patch to patch. Also, installing an upgrade may lead to the "multiple HLLAPI installed" problem described above. If it is necessary to perform an upgrade, strongly consider uninstalling the old release first, then manually deleting any files from the old emulator that may still exist, and then manually editing the SYSTEM.INI and WIN.INI (or the registry under NT/95, or CONFIG.SYS under OS/2) and removing any remaining references to the old emulator before restarting the operating system and installing the new release.

5.13   CFXVXDT/CFXVXDS Usage
- ATB/Win16 Driver Access for ATB/DOS

Selected ATB/Win16 drivers can be used from ATB/DOS applications when the DOS application is running in a DOS session under Windows 3.1 (386 Enhanced Mode only) or Windows 95. Windows NT is not supported.

The use of such a driver is mostly transparent to the ATB/DOS application, but some system setup is required. The following steps should be followed when adding support for a CFXVXDT supported driver to an ATB/DOS application:

- The inter-VM communications virtual device driver, VCFXATB.386, must be installed. Copy the VCFXATB.386 module to a drive available when Windows is starting and add the following line to the SYSTEM.INI, in the "[386Enh]" section:

    device=**x:\dir**\vcfxatb.386
- Windows must be restarted to complete the installation of the virtual device driver.
- Run the program CFXVXDS.EXE. It is recommended that an icon or shortcut be created for CFXVXDS. To start CFXVXDS automatically, a copy of the icon/shortcut may be placed in the Windows "StartUp" group/folder. Alternatively, CFXVXDS may be started with a WIN.INI load= statement or the appropriate registry entry in Windows 95.

    The first time CFXVXDS is run, no visible action will occur, nor will CFXVXDS be listed in the task list or on the taskbar. Running CFXVXDS a second time will bring up the CFXVXDS "Control Panel", which can be used to check the status of CFXVXDS, to enable or disable debugging logs, and to shut CFXVXDS down.

    CFXVXDS should generally be left running. It is a small module and will have minimal system impact if it is not being used by an ATB/DOS application. CFXVXDS is the server module that will load and manage the ATB/Win16 driver on ATB/DOS's behalf.
- Copy CFXVXDT.DDL to the *Across the Boards* driver directory for the application.
- Review the search path usage for the application (*see below*).
- Modify the application to specify the correct driver number.
- Complete any configuration requirements for the new driver.
- Ensure that the DOS session in which the ATB/DOS application will run is enabled for background execution and is not set for exclusive execution. This is the default for Windows 95. Under Windows 3.1 the setting must be changed manually for the DOS session, or a new PIF must be created with the correct settings (at the user's discretion, one of the standard PIFs may be modified instead).
- Run the application with the new driver.

Search Path Usage with CFXVXDT Supported Drivers

Basic *Across the Boards* search path processing is unchanged with CFXVXDT supported drivers, but the distributed run-time nature of these drivers leads to several anomalies which must be compensated for by the application. The search path used by the ATB/DOS application is passed to CFXVXDS when it is asked to load the ATB/Win16 driver. Because CFXVXDS is running in a different VM, with a different environment, with a different "current directory", the same search path can be interpreted differently by the ATB/DOS modules in the DOS application and CFXVXDS. This can lead to unexpected results when the various Windows modules (CFXVXDS and drivers) are searching for files.

5.13   CFXVXDT/CFXVXDS Usage (continued)

The following should be considered:

-   Explicit directory specifications work as expected. An explicit directory specification will contain a drive letter followed by a colon and a backslash. One exception is when a drive letter is mapped locally to the DOS session and is not mapped the same way for CFXVXDS.
    Examples:

OK	"c:\cfx"
OK	"c:\app\drivers"

-   Avoid any relative directory references. A relative directory depends on the execution environment in order to fully resolve the reference, and since these will probably be different for the DOS application and CFXVXDS, they will resolve differently.
    Examples:

avoid	"drivers"	- "drivers" subdirectory of current directory
avoid	"e:"	- current directory on E:
avoid	"d:atb"	- "atb" subdirectory of current directory on D:
avoid	"."	- current directory
avoid	".."	- parent of current directory
avoid	"\stuff"	- "\stuff" directory on current drive

-   Avoid environment variable references in the search path unless it can be guarenteed that the environment variable will be the same for both the ATB/DOS application and CFXVXDS. Avoid the "current directory plus environment variable" reference for the reasons in this paragraph as well as the prior.
    Examples:

avoid	"%cfxdir"	- path in the "cfxdir" environment variable
avoid	"+cfxdir"	- current directory plus "cfxdir"

5.14   cfPPP Driver Usage

Several *Across the Boards* TCP/IP drivers with embedded TCP/IP and PPP stacks are available. Several special considerations apply when using these drivers.

General Program Flow

The use of cfPPP based drivers proceeds in three steps: link startup, application driver usage, and link shutdown. The application driver usage stage is usually unchanged from the usage of a "normal" TCP/IP driver, while the startup and shutdown steps are new.

Special care must be taken to not close the driver until link shutdown occurs. If the driver is closed the link will drop. This may require removing XAPI Close requests, CFXDIAL Close-Device requests, and/or setting the APPX PPX-no-device-close switch in various places in the application.

Link Startup

The cfPPP drivers present a TTY-like terminal for use during link startup. Normal CFXDIAL script statements can be used to start the link (alternatively, the function can be performed with raw XAPI function calls, but this is not generally recommended).

Four special SEND functions are available in cfPPP mode:

XAPI Keycode	SEND Keyword	Function
ApkSysReq	SYSREQ	Starts PPP negotiation process
ApkTest	TEST	Shut down PPP connection (forces hard shut down if used twice)
ApkAttn	ATTN	Enter cfPPP command mode
ApkClearBuf	CLEARBUF	Clears TTY screen (without sending any data to the host)

A normal modem setup and dial sequence should be performed to the PPP access router. A PPP connection will usually require the following communications port settings:

> 8 Data Bits
> No parity
> 1 Stop Bit
> No Xon/Xoff flow control

In addition, it is recommended to turn on hardware flow control (usually RTS/CTS) and to enable compression and error correction on the modem.

A PPP access router will usually expect that a user ID and password be supplied via the PAP or CHAP protocols. The correct protocol is negotiated automatically, but the driver needs to be be told what the user ID and password are. This is accomplished with the commands "userid=" and "password=" entered in command mode (*see below*). These should be set before the SysReq key is sent to start PPP negotiation. Usually the user ID and password would be set before the modem dials.

In some cases (notably Compuserve), the "logon" occurs via a TTY style interaction rather that with PAP or CHAP. This should be scripted as appropriate.

5.14   cfPPP Driver Usage (continued)

When the SysReq key is sent, The TTY screen is cleared, the keyboard is locked, and the status of the PPP link is displayed on the first line. At link startup this will be "PPP: Negotiating" while the PPP negotiation happens, and when the link is fully established "PPP: Connected" is displayed. No other TCP/IP activity should occur until the connected state is reached.

Link Shutdown

When the PPP connection is to be shut down, a script should be run to end the PPP session, hang up the phone and reset the modem as appropriate. PPP link shutdown is triggered with the Test Key. When the test key is sent, the status will change to "PPP: Shutting Down". When the PPP connection is down, the status changes to "PPP: Down" and the keyboard is unlocked. If the test key is pressed while in the "PPP: Shutting Down" state, a hard reset on the PPP connection will be performed.

After the PPP connection is ended, normal modem command sequences should be used to hang up the line and reset the modem as appropriate.

cfPPP Command Mode

Various PPP driver settings can be made by issuing commands to the driver (either manually or via a script). This is done by entering "Command Mode" and entering the desired command. A command entered in command mode is not sent to the host. Command mode is entered by sending the Attn key. A "::" (two colons) prompt will be displayed. The command should be entered, followed by an enter or carriage return. Any other keystroke will cancel command mode. The driver will display a response ("<OK>" or an error/status message).

USERID=username	Sets PPP user name
PASSWORD=password	Sets PPP password
TRACKDCD=on/off	Sets Carrier Detect Tracking mode (when enabled, this will cause the link to terminate automatically if the line drops)
LIST	Displays current settings
HELP	Displays a brief help screen

Sample Link Startup Script

```
dev(atcp-ppp)
line sp(38kb) da(8) st(1) pa(n) hwflow(cts)

on timeout goto err

; Set PPP signon information
send attn 'userid=userid' enter
send attn 'password=pswd' enter
send clearbuf

; Initialize modem
send cr
send 'AT &F1 E0 V1 &C1 &D2 Q0 S0=0 &B1 &A3' cr
waitfor 'OK'
send clearbuf
send 'ATS7=60S19=0L0M1&M4&K1&H1&R2&I0B0X4' cr
waitfor 'OK'
send clearbuf
```

5.14   cfPPP Driver Usage (continued)

```
; Dial phone
send 'ATDT9,16305742790' cr
waitfor 'CONNECT'
waitfor 'LAPM'
delay (.5)

; Start PPP negotiation
+send sysreq

; Wait for PPP negotiation to complete
waitfor 'PPP: Connected'
end

:err
; Failure, just shut down and exit with a code
send test, test
delay(3)
send '+++'
delay(3)
send 'AT Z' cr
quit(4) 'Link startup failed'
```

Sample Link Shutdown Script

```
dev(atcp-ppp)
line sp(38kb) da(8) st(1) pa(n) hwflow(cts)

on timeout goto err

; Start PPP shut down
send test

; Wait for PPP shutdown to complete
waitfor 'PPP: Down'
delay(2)
send '+++'
waitfor 'OK'
send 'AT Z' cr
end

:err
; Failure, force shut down and exit with a code
send test, test
delay(3)
send '+++'
delay(3)
send 'AT Z' cr
quit(4) 'Link shutdown failed'
```

5.15 <u>CFXSWTC</u>
<u>- ATB/DOS Extended DOS Driver Support</u>

Some ATB/DOS drivers are implemented as extended DOS applications. These drivers require special support by the application to get the extended DOS environment loaded.

To use an extended mode driver the application load sequence should be changed from:

> program parm1 parm2...

to:

> cfxswtc cfx????.dll c:\dir\program.exe parm1 parm2...

CFXSWTC.EXE will load the *Across the Boards* Extended DOS environment and the *Across the Boards* driver indicated, and then shells to the application program.

> **NOTE**: The application program must be specified via the full file name, and that the system path will **not** be searched. (Therefore, the program name should be fully qualified if the program is not in the current directory.)

The current release of CFXSWTC.EXE has the following limitations:

> - A DPMI host is required
>
> - The result code of the application program is not passed through

When calling the extended mode driver, ATB/DOS will use a special translation driver (CFXDXDT.DDL) to pass calls from the real mode XAPI to the extended mode driver. This driver must be in the normal *Across the Boards* search chain.

Other than the pre-load/shell step, the use of an extended mode *Across the Boards* driver is transparent to the application.

5.16   LU6.2 Configuration

This section provides an overview of setting up LU6.2 connections for use with *Across the Boards* and *pcMAINFRAME*. This section covers the mainframe (VTAM and CICS) configurations in detail, only an overview is given of the PC side (emulator) configuration. *See the device specific sections for more information about configuring emulators for LU6.2 support*.

The documentation in this section assumes that an APPN connection will be used (e.g., Independent LUs are assumed). It is possible to run LU6.2 connections with dependent LUs, but this should in general be avoided. Contact cfSOFTWARE technical support for assistance in configuring dependent LUs.

Four areas require configuration for LU6.2 support: CICS, VTAM, the emulator or gateway, and the application (*Across the Boards* or *pcMAINFRAME*).

Emulator, VTAM and CICS Configuration Overview

The emulator, VTAM and CICS must be configured to support the LU 6.2 connection(s) that the application will use to access CICS transactions, or, in the case of pcMAINFRAME Host-Init, be accessed by CFXINIT.

The following discussion is necessarily general given the diversity of SNA networks. The procedures and changes described below describe one of many ways to implement the required functions. The emulator, VTAM and CICS configuration changes should be planned and implemented by the SNA Network Management staff at your site.

Two possible configurations are possible: The emulator can share a PU definition with other users (usually when attached via a gateway), or it can be assigned a private PU.

This discussion assumes that the host connection will be defined as an Independent LU (not all functions may be available if dependent LUs are used). Further, we strongly recommend configuring the host connection as an APPN peer connection. Other configurations are possible, but are significantly more complex to implement. *See the IBM VTAM Network Implementation Guide and contact cfSOFTWARE technical support for additional information*.

Configuring a Private PU for the Emulator

> **NOTE**: A private PU would normally be assigned to a PC with a direct connection to the mainframe, for example a DLC connection. Most gateway connections would use a shared PU.

To set up a private PU for the emulator use, the VTAM configuration should generally be done first, and then the emulator and CICS configurations.

5.16 LU6.2 Configuration (continued)

VTAM

VTAM 3.4 or later is recommended. Note: the following discussion assumes that the emulator connects directly to a VTAM rather than through an NCP. The NCP configuration requirements are similar to the VTAM configuration described below, but are not otherwise discussed.

The VTAM supporting (e.g., connected to) the PC should be set up as an APPN node. The following VTAM startup parameters may need to be specified:

> NODETYPE=NN
> NETID=USCFSW00   **REVIEW**
> CPCP=YES

Review the relevant IBM documentation prior to changing these values.

> **NOTE**: The NETID of USCFSW00 is used for illustration only in this documentation, your installation's actual SNA NETID should be substituted.

A major node should be defined for the emulator's private PU.

5.16   LU6.2 Configuration (continued)

Sample major node "PC001001":

```
**P/390 VM****************************************PC001001/SYS4**

3172 (AWS3172) DEVICES (280)                                06/02/98

****************************************************************

   09 TOKENRING STATIONS --  IDNUM=01001
                             LU 6.2 Node for PC

****************************************************************
********
SYS4PC01  VBUILD TYPE=SWNET
********

PC001001 PU      ADDR=C1                 ***REVIEW***
                 IDBLK=05D               ***REVIEW***
                 IDNUM=01001             ***REVIEW***
                 CONNTYPE=APPN
                 CPCP=YES
                 DYNLU=YES
                 LANSW=YES
                 LANSDWDW=(1,)           ***REVIEW***
                 SAPADDR=4               ***REVIEW***
                 PUTYPE=2
                 MAXDATA=1456            ***REVIEW***
                 USSTAB=USSRPCS          ***REVIEW***
                 DLOGMOD=HTPCMD2E        ***REVIEW***
                 MODETAB=KGNMODE         ***REVIEW***
****************************************************************
```

NOTES:
(1) You may prefer to code CPNAME instead of IDBLK/IDNUM
(2) The names on the VBUILD and PU statements are arbitrary and should meet your installation's standards.
(3) The items marked "**REVIEW**" should be altered to match your network requirements.
(4) Most LU6.2 connections will use modes #INTER or #BATCH. Ensure that the MODETAB selected for the PU contains these modes as well as a definition for mode SVASVCMG (these should be present in the IBM default table, usually named IESINCLM).
(5) Each PC does not have to be defined in its own major node, as many "PU" definitions as desired may be placed in one major node. It is, however, usually desirable to limit the size of a major node - a major node definition cannot be changed without inactivating the entire node. Limiting the scope of a major node facilitates changing and debugging network definitions.

Once the new major node is defined, it can be activated. Once testing is completed it may be desirable to add the new major node to the VTAM autostart list.

5.16   LU6.2 Configuration (continued)

pcMAINFRAME Host-Init Considerations

pcMAINFRAME Host-Init (CFXINIT) requires the definition of a group of VTAM APPLs. For LU6.2 support, the following additional requirements must be met:

"APPC=YES" must be specified on each APPL.

Most LU6.2 connections will use modes #INTER or #BATCH. Ensure that the MODETAB selected for the APPL contains these modes as well as a definition for mode SVASVCMG (these should be present in the IBM default table, usually named IESINCLM).

You may wish to specify a non-default VPACING value. An initial setting of VPACING=3 is safe, and may be increased later to improve performance.

If the pacing window is large, it may be necessary to increase the amount of VTAM buffer space for the application. In MVS this involves specifying the MAXPVT parameter on the APPL statement, in VSE the DSPACE parameter is specified on the JCL EXEC statement.

Multiple Domain SNA Network Considerations

If your network contains more than one VTAM, several additional considerations may apply:

If some of the VTAMs that are participating in LU6.2 sessions are not APPN nodes, then the VTAM(s) adjacent to the subarea-only VTAMs need to be defined as INTERCHANGE nodes.

It may be necessary to add cross domain resource definitions if the resources (CICSs, CFXINITs, etc.) accessed by the PC are not already visible to the VTAM supporting the emulator. Normally the APPN search functions will take care of this, but in a mixed APPN/Subarea network the APPN search may not be able to see the entire subarea network.

CICS

CICS 2.1 or later is recommended. In most installations the CICS startup parameters and VTAM definitions will be set up already.

The following CICS startup parameter must be specified:

ISC=YES

The following VTAM definition requirements must be met:

Under no circumstances must "APPC=YES" must be specified on the CICS APPL. Again APPC=YES must **not** be specified. CICS handles LU6.2 protocol processing internally, and does not use the support built into VTAM.

Most LU6.2 connections will use modes #INTER or #BATCH. Ensure that the MODETAB selected for the CICS APPL contains these modes as well as a definition for mode SVASVCMG (these should be present in the IBM default table, usually named IESINCLM).

You may wish to specify a non-default VPACING value. An initial setting of VPACING=3 is usually safe, and may be increased later to improve performance. See the discussion on "Pacing", below.

If the pacing window is large, it may be necessary to increase the amount of VTAM buffer space for the CICS region. In MVS this involves specifying the MAXPVT parameter on the APPL statement, in VSE the DSPACE parameter is specified on the JCL EXEC statement.

5.16   LU6.2 Configuration (continued)

CONNECTION and SESSION definitions will need to be made for each CICS that will be accessed by the emulator. The following discussion assumes that the definitions will be made view Resource Definition Online (aka RDO and CEDA).

> **MVS NOTE**: it is possible in CICS/ESA v4 to auto-install parallel session definitions. If you are familiar with this procedure, you may wish to use it instead of the manual procedure described below.

It is recommended that a new CEDA group be created.

One CONNECTION and one SESSION definition should be created.

Sample CEDA CONNECTION Definition (Group PC001001)

```
    OBJECT CHARACTERISTICS
      CEDA View
       Connection          : PC01       REVIEW(1)
       Group               : PC001001   REVIEW(1)
      CONNECTION IDENTIFIERS
       Netname             : PC001001   REVIEW(2)
       INDsys              :
      REMOTE ATTRIBUTES
       REMOTESystem        :
       REMOTEName          :
      CONNECTION PROPERTIES
       ACcessmethod        : Vtam       Vtam    IRc       INdirect
       Protocol            : Appc       Appc    Lu61
       SInglesess          : No         No      Yes
       Datastream          : User       User    3270     SCs   STrfield   Lms
       RECordformat        : U          U       Vb
      OPERATIONAL PROPERTIES
       AUtoconnect         : Yes        No      Yes       All
       INService           : Yes        Yes     No
      SECURITY
       SEcurityname        :
       ATtachsec           : Local      Local   Identify  Verify
       Bindpassword        :           PASSWORD NOT SPECIFIED
```

   NOTES:
   (1) These names should meet your installations' standards
   (2) This name must match the LU Name defined in the emulator or gateway

5.16   LU6.2 Configuration (continued)

Sample CEDA CONNECTION Definition (Group PC001001)

```
OBJECT CHARACTERISTICS
  CEDA View
   Sessions             : PC01              REVIEW(1)
   Group                : PC001001          REVIEW(1)
  SESSION IDENTIFIERS
   Connection           : PC001001          REVIEW(2)
   SESSName             :
   NETnameq             :
   MOdename             #INTER              REVIEW(3)
  SESSION PROPERTIES
   Protocol             : Appc          Appc          Lu61
   MAximum              : 00008 , 00004  0-32767      REVIEW(4)
   RECEIVEPfx           :
   RECEIVECount         : No            No            1-999
   SENDPfx              :
   SENDCount            : No            No            1-999
   SENDSize             : 04096         1-30720
   RECEIVESize          : 04096         1-30720
  OPERATOR DEFAULTS                         REVIEW(5)
   OPERId               :
   OPERPriority         : 000           0-255
   OPERRsl              : 1-24                        0-24,...
   OPERSecurity         : 1-64                        1-64,...
   USERId               :
  SESSION USAGES
   Transaction          :
   SESSPriority         : 000           0-255
  OPERATIONAL PROPERTIES
   Autoconnect          : Yes           No        Yes        All
   INservice            :               No        Yes
   Buildchain           : Yes           Yes       No
   USERArealen          : 000           0-255
   IOarealen            : 00000 , 00000 0-32767
   RELreq               : No            No        Yes
   Discreq              : No            No        Yes
   NEPclass             : 000           0-255
  RECOVERY
   RECOvoption          : Sysdefault    Sysdefault    None
```

   NOTES:

   (1) These names should meet your installations's standards

   (2) This name must match the CEDA CONNECTION defintion's name

   (3) The mode name should match the mode name defined in the emulator or gateway and configured for use with the PC application

   (5) Session limits should be set to allow the desired number of simultaneous connections.

   (6) The defined session will have to be given authorization to run the required CICS transactions.

5.16   LU6.2 Configuration (continued)

Emulator Configuration

The emulator or gateway must be configured with definitions that match the VTAM and CICS definitions. The exact way this is accomplished is dependent on the emulator or gateway in question, so only the general points are listed here. See the device specific sections for more information about configuring emulators for LU6.2 support.

Node Information

The emulator will require the specification of some information related to the entire APPN node. These will include the NETID, IDBLK, IDNUM and the CPNAME settings. Using the above configuration samples, the following settings should be made:

> NETID=USCFSW01
> CPNAME=PC001001
> IDBLK=05D
> IDNUM=01001

In addition, various link specific setting will have to be made (for example, the MAC address of the host, if a LAN connection is being used).

Partner LU Information

The mainframe LU's (APPLs) that the PC application will start connections with will need to be defined. For example, if a CICS region with an APPLID of CICSPROD is to be accessed, a partner LU definition defining USCFSW00.CICSPROD should be added. In most implementations this definition will be given an alias name, which is what will actually be used on the PC to reference the host LU. For simplicity, consider setting the alias name to the LU name.

Ensure that the LU definition is enabled for parallel sessions (usually the default).

Mode Names

The mode names that will be used must be defined. Typically modes #INTER or #BATCH are used. In addition the mode SNASVCMG is required. In most cases standard definitions for these modes are provided by default.

These modes may be changed to increase or decrease session limits and to alter the pacing parameters for the sessions established using that mode.

Local LU Definitions - Stand-alone PCs

In addition to the local LU defined via the CP name, it is possible to define additional LUs. These alternate LUs may be used for incoming sessions, but then will require corresponding CICS definitions. In general use of alternate local LUs on a stand-alone PC should be avoided.

Local LU Definitions - Gateways

In addition to the local LU defined via the CP name, it is possible to define additional LUs. Gateways usually provide some function for associating a given LU definition with a particular user accessing that gateway. The actual LUs assigned to the user running the application is the one that will need to be defined to CICS.

5.16   LU6.2 Configuration (continued)

CPI-C Side Information Definitions

Side information is used to provide default settings for an application program, although in many cases the application allows the settings configured in side-info to be overridden. A minimal side-info record is required. Side-info usually contains a default mode name, a default partner LU name and a default transaction program name. Side-info is only used by CPI-C drivers (and not by APPC drivers).

Transaction Program Definitions

For use with host-initiated transactions (e.g., pcMAINFRAME host-init or CFXINIT), transaction programs need to be defined. In general the transaction program name (TPN) is defined along with the command line used to start the application program on the PC. The TPN will be referenced by the host application, and the command line should be formatted as appropriate for the PC application.

> **NOTE**: For PC-initiated transactions, it is not necessary to define TPNs on the PC.

Configuring a Shared PU for the Emulator (Gateway)

If the PC is accessing the mainframe via a gateway, the host will have it's (SNA) sessions with the gateway, and not with the individual PC. The gateway will redistribute the SNA sessions over the LAN to the individual PCs.

In the gateway scenario, the host definitions will usually be the same as described in the previous section (although they will refer to the gateway, and not to the individual PCs), and the session limits will often need to be larger, since there will likely be more active sessions on the gateway than there would be on an individual PC.

In many cases, there will be existing LU6.2/APPC definitions that provide for sessions between the SNA Server, VTAM and the target CICS's. It would generally be desirable to use the preexisting definitions.

To set up a new PU definition for the gateway, follow the procedures in the prior section using the gateway as the target instead of an individual PC, then proceed to the "Gateway" section below.

To make use of an existing set of definitions, the following needs to be done:

VTAM

The required PU definitions should be in place and should not require any changes.

CICS

Ensure that the VTAM, CICS Startup and CONNECTION and SESSION definitions are in place (as defined in the prior section), if not follow the procedures in the prior section. Ensure that those SESSIONs are authorized to invoke the required transactions. Ensure that the session limits are adequate to handle both the existing traffic and the new traffic.

pcMAINFRAME Host-Init (CFXINIT)

The procedures in the previous section should be followed.

Gateway

The PC that will make use of the LU6.2 session will need to be added to the gateway's access list, and the correct default local LU defined. The session limits on the modes to be used should be reviewed. The client PC will then need to be configured to access the gateway.

5.16 LU6.2 Configuration (continued)

<u>Pacing</u>

Proper pacing in an SNA network is important to prevent congestion and buffer overflow errors. In SNA configurations without much LU6.2 activity, certain default pacing values may be set that can cause problems. LU6.2 sessions are capable of generating very large quantities of traffic in a single direction without responses from the receiver. By contrast, the typical terminal session will never send more than one screen's worth of data at a time.

Pacing is controlled at several levels, and is a generally complex topic. The IBM VTAM Network Implementation Guide provides a detailed overview of pacing.

By setting the three pacing values in the mode definitions and the VPACING value on the APPL definition, to relatively small (non-zero) numbers (we suggest three as a starting point), are limiting total activity to a modest number of parallel sessions, all congestion and buffer overflow problems should be avoided. Setting small pacing values will, however, adversely affect performance. Running with large pacing values or running many simultaneous sessions requires careful attention to pacing and buffer space availability.

By default *Across the Boards* LU6.2 drivers, in conjunction with APPX, perform an internal pacing function which limits the amount of unacknowledged data sent to the host. Usually this limit is twenty (20) data blocks (usually 2-4KB). This may be overridden by the application or in MAINCON. Even without any SNA pacing, the pacing performed by APPX will usually suffice for a modest number of parallel sessions.

5.17   <u>Configuring the Telnet TN5250 Drivers</u>

MAINCON Configuration Panel: E8: "Telnet TN5250"

<u>Configuration of Telnet TN5250 Drivers</u>

If MAINCON is not used to configure the Telnet TN5250 drivers, the driver will run as a IBM 3179-2 type of 5250 terminal, with no TCP/IP trace and using the Telnet Well-Known-Port as the default (#23).

MAINCON can be used to configure the TN5250 drivers to support additional types of terminals, including some that support 27x132 mode. See the list of available types in MAINCON. The driver does not support the Structured Field API, and when used with APPX must be run in buffer mode.

MAINCON can be used to enable a trace of the TCP/IP activity between the driver and the host. Entering a trace size other than zero will enable the trace. The trace data is kept in a circular buffer and will be written when the driver is closed. A file called TCPTRAC.BUF will be produced in the current working directory. The program TRACEFMT.EXE will format the TCPTRAC.BUF file.

MAINCON can also be used to alter the default destination port on the host. If nothing is entered, MAINCON will default to the Telnet Well-Known-Port (#23).

MAINCON can also be used to set "disconnect at denegotiate" mode. When enabled, this mode forces the Telnet session to disconnect whenever a host action that would normally only cause a drop to NVT mode occurs.

MAINCON has a configuration option that controls the behavior of the message (or error) line. By default, the message line will be separate as appropriate for the terminal model (resulting in a presentation space one line larger than normal). MAINCON can be used to change the message line to always use the last line of the display, which matches the behavior of some terminals, and many other emulators.

MAINCON has a configuration option that control what happens when the SysReq key is hit. By default, hitting SysReq will place the terminal in SysReq mode, where a blank line is displayed and a command may be entered. MAINCON can be used to change the normal behavior to match that of many other emulators which do not permit the entry of the SysReq command, and which send a null command to the host immediately (this typically results in the host sending the SysReq menu).

MAINCON also has options for changing the type of attributes returned (3270 style, 5250 style or AS/400 style), and for keyboard interpretation (3270 style or 5250 style). The 3270 modes exist primarily for 3270 applications that do not understand 5250s. The mapping for 5250 style attributes to 3270 attributes is not perfect, and the resulting color schemes will not be completely correct, but it is usable.

> **NOTE**: Dialog requires the use of 3270 attribute and mode.

See Section 6.28 for additional TN5250 configuration options.

<u>Operation of Telnet TN5250 Drivers</u>

These drivers implements all TN5250 functions including NVT mode if the host does not support TN5250. A new MAINCON configuration panel exists to support these drivers. This allow the configuration of terminal type the size of the internal trace buffer, and the default destination port address to use if the Telnet well-known-port is not being used. Other configuration options are provided as well.

5.17   <u>Configuring the Telnet TN5250 Drivers (continued)</u>

When first opened, the drivers display an NVT screen with a message requesting entry of the host name or address. The NVT screen consists of one enterable line (at the bottom), and a scrolling message area above the enterable area. 5250 screen attributes are emulated on the NVT screen by the driver. The OIA indicates if the driver is disconnected ("disc" at the beginning of the OIA), in NVT mode ("NVT") or in a TN5250 session (the terminal type is displayed).

See Section 5.4, TCP/IP Host Names and Addresses, for a description of the addresses that can be entered to connect to a host.

The ApkTest key causes the driver to disconnect from the host and return to disconnected NVT mode.

In NVT mode, the ApkPF12 key functions as a "retrieve" key, and will redisplay recently entered items.

Section 6 - MAINCON Driver Configuration

Device Configuration

In many cases pcMAINFRAME and Across the Boards have defaults which allow the use of a communications device without any further configuration. For devices requiring configuration (for example, protocol converters, cfDFT, or LU 6.2 devices), or if the defaults are inappropriate for your configuration, the program MAINCON is used to create the appropriate configuration files. In addition, MAINCON can be used to configure display, keyboard and trouble-shooting options.

MAINCON Quick Notes

The following notes describe some of the most common configuration requirements. The configuration panels referenced below are more fully documented in the following section. Many of the configuration panels referenced below have additional options, but these can be ignored in most instances.

1. Most emulators supporting a HLLAPI (sometimes called EHLLAPI or EEHLLAPI) do not require any configuration other than the specification of the correct host session and device in the pcMAINFRAME set-up file.

2. For IBM 3278/79, IBM 3270 connection cards and compatibles (B1), as well as IRMA cards and compatibles (B2), the defaults are usually correct, except in the case of Micro channel machines, where IBM 3270 connection cards frequently default to RAM address DE00. For IBM cards, the memory range (usually CE00-CFFF) may have to be excluded from an installed memory manager (EMM386, QEMM, etc.).

3. Protocol Converter, cfDFT and LU6.2 devices always require configuration.

4. In DOS, if a COMM port other than COM1 or COM2 is used, or a network modem server is in use, Communication Port Assignments (D1) must be used to define the port to use.

5. TCP/IP Telnet TN3270 drivers (E1) do not require configuration, but almost all installations will want to set the 3270 Terminal Model to "2E" so that structured fields can be used for enhanced performance.

6. The Video Mode/Keyboard configuration panel (A1) may be used to re-map the 3270 keyboard.

7. Users with 3270 emulators or 3174s configured for languages other than U.S. English will need to set the Controller Language on the Video Mode/Keyboard configuration panel (A1). Using MAINCON

Running MAINCON

MAINCON can be run from the DOS or OS/2 command line, as well as clicking on the icon Device Configuration (pcMainframe for Windows only). It displays its main menu. Enter the two character code associated with the menu entry and the selected configuration panel will be displayed. Alter the parameters as needed, and press PF10 to save the configuration file.

> **NOTE**: Some configurations have multiple screens which can be displayed by using PgUp and PgDn.

```
_____        ACROSS-THE-BOARDS(r)  Config        _____


  A. General Configuration                D. Async/Protocol Converter
     1. Video Mode/Keyboard                   1. Comm Port Assignments
     2. Trouble Shooting                      2. IBM 3101
                                              3. DEC VT100
  B. CUT-Mode/Single Session 3270             4. TYMNET78
     1. IBM 3270 Connection                   5. TTY and PC-to-PC
     2. DCA Irma                              6. DEC VT220
     3. Forte                                 7. DEC VT320
     4. IDEA
     5. AST Remote
     6. Pathway Remote
     7. Xircom Pocket 3270

  C. Gateways/HLLAPI, PS-API
     1. HLLAPI/PS-API Host Session          PgDn for more...
     2. cfDFT                              (TCP/IP, LU6.2, DECNET
     3. PCOX/CXI/Novell                     and 5250 on next page)
     4. Banyan VINES

         Enter selection (eg. A1, D6, etc.) or press ESC to exit
  Configuration cancelled
```

```
_____        ACROSS-THE-BOARDS(r)  Config        _____

                    +----------------------------------+

  E. TCP/IP, DECNET                       G. LU6.2 Drivers
     1. TELNET TN3270                        1. Dynacomm Elite
     2. TELNET VT220                         2. WinCPIC
     3. DECNET VT220                         3. IBM Pers. Comm. NT/95 CPIC
     4. TELNET VT320                         4. Extra! NT/95
     5. APPX/TCP                             5. Rumba NT/95
     6. APPX/TCP - cfPPP                     6. WinAPPC NT/95 (SNA Server)
     7. TN3270 w/TN3287                      7. IBM Pers. Comm. NT/95 APPC
     8. TELNET TN5250
                                          X. Miscellaneous Drivers
  F. 5250 Emulation                          1. cfMEMPIPE Driver
     1. PC Support AS/400
     2. 5250 Emulation
     3. 5250 HLLAPI



                                         PgUp for more...

         Enter selection (eg. A1, D6, etc.) or press ESC to exit
```

The following section describes the configuration options available in MAINCON. The entries are in the same order as the MAINCON menu. If you are unsure of which device you are using, refer to the Introduction, page 1.

6.1 MAINCON Panel A1
VDT/Keyboard Config

Configuration filename: MAINCFG.VDT

Used by All Drivers

```
_____        ACROSS-THE-BOARDS(r)  Config        _____


                                                           Page  1 of  3

                      ---------- Video Monitor Mode ----------

0 = AUTO, 1 = BW80, 3 = IBM 3270PC...... 0
0 = fast mode, 1 = slow (well behaved).. 0
Controller Language..................... 1
Alternate key-scancode file suffix......
Alternate buffer-code file suffix.......
Super VGA BIOS type..................... 0
Choose desired video dimensions......... 0
Cursor following........................ Y
EABs requested?......................... N
Text-Translate-Table ID.................




If color or monochrome setting is to be determined automatically, enter 0. To
force black and white, enter 1. If using a 3270PC, enter 3.

F10: write to disk   PgDn: Keyboard layout   F7: customize keys   Esc: Exit
```

1. **DIALOG Display Colors**
    For DIALOG and CFXDIAL only. 0 will cause the current display color (color or blank and white) to be used. 1 forces black and white mode. 3 uses an alternate color scheme for 3270 PCs and ATs (obsolete). The default is 0.

2. **DIALOG Video Mode**
    For DOS DIALOG and CFXDIAL only. 0 causes direct-to-memory updates of the display adapater. 01h forces BIOS usage. The default is 0.

6.1   MAINCON Panel A1, VDT/Keyboard Config (continued)

3. Keyboard Language Code

Causes the Controller Language Variable 10, Extra 10 and Extra-Extra 10, and the 3270 Controller Language Set Translate Table to be loaded as appropriate for the selected 3270 Keyboard Language. The following are defined:

> 1 - U.S. English
> 2 - Dutch
> 3 - French AZERTY
> 4 - German
> 5 - Italian
> 6 - Spanish
> 7 - Brazilian
> 8 - U.K. English
> S - Finnish/Swedish
> H - U.S. English Hydra

If a Keyboard Language Code of '9' or '*' is selected, a custom configuration is created.

4. Alternate Key Scan-Code File ID

The CFXIBMX, CFXIRMA, CFXFORT, CFXIDEX, CFXMPLS and CFXXIRC drivers transmit 3270 terminal keyboard scan codes directly to the controller. Some odd controllers are not configurable for the standard typewriter keyboard, or use a different set of scan codes. If configured, these drivers will load an alternate table of keyboard scan-codes from the file MAINSCAN.SCx, where the "x" is the byte configured in this field. This field should be left blank if no alternate scan-code table is configured.

5. Alternate Buffer Code File ID

The CFXIBMX, CFXIRMA, CFXFORT, CFXIDEX, CFXMPLS, and CFXXIRC drivers deal directly with 3270 buffer codes. If configured, these drivers will load an alternate table of buffer-code-to-ASCII and ASCII-to-buffer-code translate tables from the file MAINBUFC.BCx, where the "x" is the byte configured in this field. This field should be left blank if no alternate buffer-code table is configured.

6. 3270 Model Info

DIALOG and CFXDIAL only. The following four fields controlling the display of 3270 models 3, 4 and 5, as well as EABs.

NOTE: Because of the increase in RAM required to support EABs and models 3, 4 and 5, DOS versions of CFXDIAL and DIALOG exist which support only 3270 model 2 without EABs. These fields are effectively ignored by these reduced function modules. All of these fields are ignored by DIALOGG and CFXDIALG.

7. Super VGA BIOS Type

DIALOG and CFXDIAL only. Ignored for OS/2 versions of DIALOG and CFXDIAL (OS/2 versions of DIALOG support 80x25 screens only). Ignored for model 2 only versions of DIALOG and CFXDIAL. Certain Super-VGA displays support 132 column text modes which DIALOG and CFXDIAL can use when displaying a 3270 model 5 screen. The following values may be entered:

> '0' = Standard (default)
> '1' = Tseng Labs
> '2' = Dell/Paradise/Cardinal
> '3' = IBM PS/2 SVGA (ala model 56/57)

Ignored by DIALOGG and CFXDIALG.

6.1   MAINCON Panel A1, VDT/Keyboard Config (continued)

8. Video Dimensions

DIALOG and CFXDIAL only. Ignored for OS/2 versions of DIALOG and CFXDIAL (OS/2 versions of DIALOG support 80x25 screens only). Ignored for model 2 only versions of DIALOG and CFXDIAL. If set to "Autodetect", DIALOG will make use of the 80x43 or 80x50 display available on EGA and VGA displays when displaying 3270 models other than 2. The following values may be entered:

> '0' = Autodetect (default)
> '1' = Force use of 80x25 mode

Ignored by DIALOGG and CFXDIALG.

9. Cursor Following

DIALOG and CFXDIAL only. Ignored for model 2 only versions of DIALOG and CFXDIAL. Set to 'Y' (default) or 'N'. If a 3270 model is being displayed on a screen physically smaller than that required by the current 3270 model, DIALOG will display part of the screen and allow the user to shift between the two or four displayed quadrants. If the Cursor Following field is not set to 'N', then DIALOG will also automatically shift the display to keep the 3270 cursor visable at all times. Ignored by DIALOGG and CFXDIALG.

10. EABs Requested

DIALOG and CFXDIAL only. Ignored for model 2 only versions of DIALOG and CFXDIAL. Set to 'Y' or 'N' (default). If set to 'Y', EABs will be interpreted by DIALOG. Ignored by DIALOGG and CFXDIALG.

11. APPX Text Translate Table ID

APPX 3.08 and above support a "Text-Translate" mode in which an external table is loaded to define the ASCII to EBCDIC and EBCDIC to ASCII translation. This field (which may be overridden by the APPX control block field PPX-TEXT-XLAT-ID) specifies the name of the file containing the translate tables. The file name is MAINXLAT.TXx where the "x" is replaced by the value in this field. The following translate tables are supplied by cfSOFTWARE:

> MAINXLAT.TX1 - U.S. English
> MAINXLAT.TX2 - Dutch
> MAINXLAT.TX3 - French AZERTY
> MAINXLAT.TX4 - German
> MAINXLAT.TX5 - Italian
> MAINXLAT.TX6 - Spanish
> MAINXLAT.TX7 - Brazilian
> MAINXLAT.TX8 - U.K. English
> MAINXLAT.TXA - Danish/Norwegian
> MAINXLAT.TXB - Finnish/Swedish Alternate
> MAINXLAT.TXS - Finnish/Swedish

These suffix values have been given to same values as the Keyboard Language Code for the controller for conveniance only, there is no hard relationship between the fields. The utility MAINXLAT can be used to modify these translate tables or to create custom ones.

6.1   MAINCON Panel A1, VDT/Keyboard Config (continued)

```
_____      _____      _____
                      |    ACROSS-THE-BOARDS(r)  Config   |
                      |_____|
                                                          Page  2 of  3
                           PC Keys Representing 3270 Keys
  ----3270---- --------PC---------       ----3270---- --------PC---------
 ENTER         ↵ (Enter)                PF16         Alt R
 PF1           Alt 1                     PF17         Alt T
 PF2           Alt 2                     PF18         Alt Y
 PF3           Alt 3                     PF19         Alt U
 PF4           Alt 4                     PF20         Alt I
 PF5           Alt 5                     PF21         Alt O
 PF6           Alt 6                     PF22         Alt P
 PF7           Alt 7                     PF23         Alt A
 PF8           Alt 8                     PF24         Alt S
 PF9           Alt 9                     PA1          Alt J
 PF10          Alt 0                     PA2          Alt K
 PF11          Alt -                     PA3          Alt L
 PF12          Alt =                     CLEAR        F2
 PF13          Alt Q                     SYSREQ       Alt F1
 PF14          Alt W                     TEST         Alt F8
 PF15          Alt E                     ATTN         F1

Use ↑↓ keys to position. Press ↵ to select a key for change
F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page   F1:help
F2: toggle gray-keys same/different -  SAME                F3: 5250 keys
```

```
_____      _____      _____
                      |    ACROSS-THE-BOARDS(r)  Config   |
                      |_____|
                                                          Page  3 of  3
                           PC Keys Representing 3270 Keys
  ----3270---- --------PC---------       ----3270---- --------PC---------
 ↑ arrow        ↑ (Up-arrow)            PROG1         -- not used --
 ↓ arrow        ↓ (Down-arrow)          PROG2         -- not used --
 ← arrow        ← (Left-arrow)          PROG3         -- not used --
 → arrow        → (Right-arrow)         TAB_fwd       Tab →|
 Dialog scroll  -- not used --          TAB_back      Shift Tab |←
                                         HOME          Home
 Crsr_Sel      Alt F2                    BACKSPACE     Backspace
 CRSR_BLINK    -- not used --           —>> arrow     Ctrl →
 ERASE_EOF     F6                        <<— arrow     Ctrl ←
 PRINT         F7                        NEW_LINE      Ctrl ↵
 CLICK         -- not used --           RESET         F10
 DUP           Alt G                     ERASE_INP     F4
 MARK          Alt H                     ALT_CURSOR    -- not used --
 INSERT        Ins                       IDENT         Alt F7
 DELETE        Del                       DVC_CANCEL    Alt F10
 DIALOG End    End                       Jump          -- not used --

Use ↑↓ keys to position. Press ↵ to select a key for change
F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page   F1:help
F2: toggle gray-keys same/different -  SAME                F3: 5250 keys
```

Default 3270 Keyboard Layout

6.2 MAINCON Panel A2
APPX and Troubleshooting

Configuration filename: MAINCFG.PPX

Used by All Drivers

```
_____        ┌──────────────────────────────────┐        _____
                         │    ACROSS-THE-BOARDS(r)  Config   │
                         └──────────────────────────────────┘
                                                                 Page  1 of 2

                          --- Communications Trouble Shooting ---

PC APPX Trace Level..................... N
Mainframe APPX Trace Level............. N
Mainframe APPX Trace Queue type........
Serial Line Trace...................... N
Serial Line Trace Size in K bytes....... 0
Serial Line Input Queue Size in K bytes. 0
PC XAPI Trace Level..................... N






Enter N for no PC APPX trace, X to trace Connect, Cancel, Disconnect and errors,
or Y for a full trace.

F10: write config to disk   Esc: Exit  PgDn: next config menu
```

1. **Trace Mode**

   Controls the default level of APPX trace on the PC. 'N' is no APPX trace, 'X' is trace only connect and disconnect processing and errors, and 'Y' is a full APPX trace. The default is 'N'. This field may be overridden by the PPX-TRACE field in the APPX control block.

2. **Mainframe Trace Level**

   Controls the default level of APPX trace on the Mainframe. 'N' selects no APPX trace, 'X' will trace only connect and disconnect processing and errors, and 'Y' is a full APPX trace. The default is 'N'. This field may be overridden by the PPX-TRACE field in the (mainframe) APPX control block.

3. **Mainframe Trace Queue**

   Controls the location where trace data is recorded on the mainframe. Currently used only by CICS APPX, the allowed values of 'T' or 'C' will cause the trace to be placed in a terminal specific or common AUX Temporary Storage Queue. If a terminal specific queue is selected, the queue name will be "APPXtttt" where tttt is the terminal ID. The common queue is named "APPXAPPX". This field may be overridden by the PPX-TRACQ field in the (mainframe) APPX control block.

4. **Serial Line Trace**

   For serial device drivers, setting this switch to 'Y' will cause a serial line trace to be generated. This field can be overridden by the APO_TRACE switch in the XAPI open block.

   NOTE: An APPX PC trace implies a serial line trace if a serial device driver is in use.

6.2 MAINCON Panel A2, APPX and Troubleshooting (continued)

5. Serial Line Trace Size in K bytes

This option allows the user to configure the amount of space to be allocated to the serial line trace buffer. If zero is specified or the device driver is unable to allocate the specified amount, a default allocation will be made (the size of the default allocation varies by device).

6. Serial Line Input Queue Size in K bytes

This option allows the user to configure the amount of space to be allocated to the serial line input queue. If zero is specified or the device driver is unable to allocate the specified amount, a default allocation will be made (the size of the default allocation varies by device).

7. XAPI Trace

This option allows the user to configure whether an XAPI trace file will be produced. A value of 'N' will produce no trace, a value of 'Y' will produce a trace, and a value of 'Z' will produce a trace file, forcing write-to-disk for each trace entry.

6.2   MAINCON Panel A2, APPX and Troubleshooting (continued)

```
_____    ┌─────────────────────────────┐    _____
                  │    ACROSS-THE-BOARDS(r)  Config │
                  └─────────────────────────────┘
                                                   Page  2 of 2

                    --- Communications Trouble Shooting ---

Safe-character mode.................... N
Flicker check time (in 100ths second)... 0
Transaction via Keystroke.............. N
Protocol Converter Send Options........ 0
APPX Block Size........................ 0
Reliable Link Pacing................... 0
Maximum enter key retries.............. 0
Duplicate protocol converter confirm.... N




N=Normal mode (default), Y=safe mode on, A=auto detect.  Safe mode uses only
common characters to avoid 3270 translation problems.  Safe mode is slower.

F10: write config to disk   Esc: Exit  PgUp: prior page
```

8. **Safe Character Mode**

    Setting this switch to 'Y' will force APPX to connect in Disty/Safe Character mode. Setting 'A' allows APPX to auto-drop to Dirty/Safe Character mode if needed. The default is 'N' (no Dirty/Safe Character mode). This field may be overridden by the PPX-DIRTY-MODE field in the APPX control block. *See the APPX Programmer's Guide for a description of Dirty/Safe Character mode*.

9. **Flicker Time**

    When transfering data over LU 2 type links, APPX will wait a specific amount of time after all other indications that the data block has been received properly to insure that the mainframe and controller are really done updating the 3270 buffer. This "Flicker Check" is normally dealt with automatically by code in each device driver. In some cases, a longer flicker check is required. If this field is set to zero, the default flicker check is used. If set to a non-zero value, the flicker check will be for the number of hundredths of seconds specified in this field. The valid range of values for this field is 0 through 255.

10. **Transaction Only**

    Setting this switch to 'Y' will force APPX to always begin the connect process by sending the transaction code as keystrokes. Normally, APPX will look at the current 3270 buffer to determine if it is a formatted screen, and if it is, APPX will send the transaction code as keystrokes. On an unformatted screen, APPX will send the entire handshake immediately. In some environments this can be a problem. For example, if a protocol converter being used (so that attributes are never visible), and the host environment has a character defined in such a way as to cause the connect block to be rejected by the system (for example, if the CMS command delimter is defined as one of the characters in the connect block, CMS will attempt to interpret the connect block, and cause an error). Setting this switch to 'Y' may slightly lengthen the connect process, but will prevent the host operating system from attempting to interpreting the connect block.

6.2   MAINCON Panel A2, APPX and Troubleshooting (continued)

11. Protocol Converter Send Options

This option allows the customization of 3270 sends to protocol converted attached PCs. This field should almost never be changed. The following options are available:

> 0 - Normal: No Erase-Write, ETB Confirm will be sent separately.
> 1 - No Erase-Write, ETB Confirm will be included in the primary send.
> 2 - Erase-Write, ETB Confirm will be sent separately.
> 3 - Erase-Write, ETB Confirm will be included in the primary send.

This field will be ignored if the PC APPX is not at least v3.11, 05/04/93 and the mainframe APPX is not at least v3.11, 05/05/93.

12. APPX Block Size

This option allows a default blocksize to be specified for APPX. This field will be overridden by the PPX_BUFFER_SIZE field if any value is suppied. A value of zero will cause APPX to use a default block size. Values from 128 to 3840 are supported.

13. Reliable Link Pacing

This option permits the specify the "pacing window" for APPX when used with reliable links (e.g., LU62 devices). The pacing window is the number of transmission blocks which are sent before an acknowledgment is expected from the other side. For an infinite pacing window, use 999.

14. Maximum Enter Key Retries (0-n) (0)

This option allows APPX to attempt to recover from conditions where it appears that a critical data stream item has been lost during a protocol converter session. These include the ETB, ETB confirm and Enter key. The enter key will be resent up to the configured number of times in an attempt to recover the session.

15. Duplicate Protocol Converter Confirm

This option allows the user to cause APPX to send a duplicate protocol converter block confirmation for each downstream block. A value of 'Y' causes the duplicate confirmation do be used, which lessens the likelihood that block control data will be lost due to line noise and other factors. This option is recommended if you experience sporadic unexplained timeout errors when using protocol converter devices (e.g., VT100, 3101 via dialup lines).

6.3   MAINCON Panel B1
CUT Mode/Single Session 3270
IBM 3270 Connection

Configuration filename: MAINCFG.IBM

Used by cf Device Drivers:

#	Name	Description
7	CFXIBMX	IBM 3278/9 CUT Mode
83	CFXIBMX3	WOW IBM 3278/9 CUT Mode

```
_____        _____         _____
                       |   ACROSS-THE-BOARDS(r)  Config  |
                       |_____|

                          ---- IBM 3270 Connection (CUT mode) ----

First IBM port address (in hex)........ 2D0
IBM RAM address (in hex)............... CE00
CUT mode model......................... 2
Dead Controller Check.................. 0




If IBM I/O addresses were changed from hex 2D0, enter new I/O address here.


F10: write config to disk   Esc: Exit
```

1. **I/O Port Origin**

   If the I/O port base address on the IBM 3279/79, IBM 3270 Connection Card, or compatible coax card has been changed from the normal 2D0h, this field must be configured.

2. **RAM Address**

   If the shared RAM address on the IBM 3279/79, IBM 3270 Connection Card, or compatible coax card has been changed from the normal CE00h, this field must be configured.

3. **CUT Model/EAB**

   The 3270 model to use. '2' = 24x80, '3' = 32x80, '4' = 43x80, '5' = 27x132. EABs are not supported by the CFXIBMX driver and the second character of this field must always be blank.

4. **Dead Controller Check**

   When set to '1', will attempt to detect if a 3174 controller stops responding.

   NOTE: This requires a feature that is not implemented on all IBM compatible coax cards. This should not normally be enabled.

6.4   MAINCON Panel B2
CUT Mode/Single Session
DCA Irma Coax Card

Configuration filename: MAINCFG.IRM

Used by cf Device Drivers:

#	Name	Description
1	CFXIRMA	Irma/Irma2/Irma3
81	CFXIRMA3	WOW Irma/Irma2/Irma3

```
 _____        _____        _____
                       |                                |
                       |    ACROSS-THE-BOARDS(r)  Config |
                       |_____|


                        -------------- DCA Irma ---------------

Irma Card Model......................... 0
First I/O port address (in hex)......... 220
CUT mode model and EAB support.......... 2











0=Original IRMA card, 2=Irma2, 3=Irma3.


F10: write config to disk   Esc: Exit
```

1.   **Irma Model**

     The type of Irma card installed. '0' = any Irma card or compatible. '2' = Irma 2. '3' = Irma 3. If '0', only I/O port origin 220h and model 2 (or 2E) is supported. If '2' or '3', models 3, 4 and 5 (and 3E and 4E) are supported. If '3', model 5E is also supported (model 5E is not supported on the Irma 2).

2.   **I/O Port Origin**

     If the I/O port base address on the Irma card has been changed from the normal 220h, this field must be configured. If the I/O port origin is not 220h, model 5 (or 5E) is not supported.

3.   **CUT Model/EAB**

     The 3270 model to use. '2' = 24x80, '3' = 32x80, '4' = 43x80, '5' = 27x132. If followed by an 'E' (e.g., '2E', '3E', '4E' or '5E'), then Extended Attribute Bytes (EABs) will be supported. *See the restrictions under #1 and #2 above*.

6.5 MAINCON Panel B3
Forte

Configuration filename: MAINCFG.FOR

Used by cf Device Drivers:

#	Name	Description
4	CFXFORT	Forte
82	CFXFORT3	WOW Forte

```
_____    ┌─────────────────────────────┐    _____
                     │       ACROSS-THE-BOARDS(r)  Config       │

                     ------------- Forte 3278/9 -------------
First I/O port address (in hex)........ 280




















If the I/O port address has been changed from 280, then enter the new I/O port
address here.

F10: write config to disk   Esc: Exit
```

1. **I/O Port Origin**

   Forte, Irma2, Irma3 and compatible cards allow the base I/O port be configured. If it has been changed from 280, this field must be configured.

   NOTE: Use of this driver on Irma2 and Irma3 cards is not recommended. The current Irma (CFXIRMA) driver explicitly supports the Irma2 and Irma3.

6.6   MAINCON Panel B4
IDEAcomm

Configuration filename: MAINCFG.IDE

Used by cf Device Drivers:

#	Name	Description
5	CFXIDEX	IDEA Card

```
_____      ┌─────────────────────────────┐     _____
                         │     ACROSS-THE-BOARDS(r)  Config      │
                         └─────────────────────────────┘

                         ------------- IDEA 3278/9 --------------

IDEAcomm RAM address (in hex)........... FFF0











If RAM address changed from FFF0 (1FF0 on PS/2s), enter new RAM address here.
Note: If the IDEA software is earlier than v4.3, use the card in Irma mode.

F10: write config to disk   Esc: Exit
```

1. **Shared RAM Address**

    The IDEA coax card allows the base shared RAM address to be configured. If it has been changed from D000, this field must be configured.

6.7   MAINCON Panel B5
AST Remote

Configuration filename: MAINCFG.AST

Used by cf Device Drivers:

#	Name	Description
8	CFXASTX	AST Remote

```
_____    ┌─────────────────────────────┐    _____
                         │     ACROSS-THE-BOARDS(r)  Config │
                         └─────────────────────────────┘

                      -------------- AST Remote --------------
Logical unit (LU)....................... 0
AST interrupt number (in hex).......... 59









Enter LU number to connect to (0 to 31 if bisync, 2 to 255 if SNA).


F10: write config to disk    Esc: Exit
```

1. **Logical Unit**

   The logical unit number to access. This must match a configured LU number in the emulation software.
   For BISYNC, 0 through 31 are valid, and for SNA, 2 through 255 are valid.

2. **API Interrupt Number**

   This number for AST defaults to decimal 89 (hex 59). If the AST emulation software has been configured
   for some other interrupt number, then that new number must be indicated here.

6.8 MAINCON Panel B6
Pathway Remote

Configuration filename: MAINCFG.PTH

Used by cf Device Drivers:

#	Name	Description
11	CFXPATH, CFXPAT4, OLDPATH, OLDPAT4	Pathway/ICOT Remote

```
_____        ACROSS-THE-BOARDS(r)  Config        _____


                   ------------ Pathway Remote ------------
Logical unit (LU)....................... 0
Pathway interrupt number (in hex)....... 60









Enter LU number to connect to (0 to 31 if bisync, 2 to 255 if SNA).

F10: write config to disk   Esc: Exit
```

1. **Logical Unit**

   The logical unit number to access. This must match a configured LU number in the emulation software.
   For BISYNC, 0 through 31 are valid, and for SNA, 2 through 255 are valid.

2. **API Interrupt Number**

   This number for Pathway defaults to decimal 96 (hex 60). If pathway emulation software has been
   configured for some other interrupt number, then that new number must be indicated here.

6.9   MAINCON Panel B7
CUT Mode/Single Session 3270
Xircom Pocket

Configuration filename: MAINCFG.XIR

Used by cf Device Drivers:

#	Name	Description
32	CFXXIRC	Xircom Pocket 3270

```
 _____      _____      _____
                      |                                  |
                      |    ACROSS-THE-BOARDS(r)  Config   |
                      |_____|

                        ------ Xircom Pocket 3270 Adapter ------

Xircom Multiplex ID..................... C7
CUT mode model and EAB support.......... 2




If the Multiplex ID has been changed from hex C7, enter the new value here.
(DOS only).

F10: write config to disk    Esc: Exit
```

1. **Xircom MPX ID**
   The multiplex ID used by the Xircom TSR may be changed from the normal value of C7h. If the MPX ID has been changed from c7h, the correct value must be configured here.

   NOTE: this field is used only by the Xircom driver for DOS. The Xircom driver for Windows ignores this field.

2. **CUT Model/EAB**
   The 3270 model to use. The Xircom supports only 3270 model 2 (24x80). If followed by an 'E' (e.g., '2E'), then Extended Attribute Bytes (EABs) will be supported. The allowed values for this field are '2 ' and '2E'.

6.10 MAINCON Panel C1
Multi-host Session
HLLAPI/API/Workstation/etc.

Configuration filename: MAINCFG.327

Used by cf Device Drivers:

#	Name	Description
3	CFX327X	IBM 3270PC/Workstation
13	CFXLV3X	IBM Level 3.0 (PSAPI)
14	CFXHLLX	ENT/HLLAPI DOS HLLAPI (IBM Level 1.0)
23	CFXDFTX	cfDFT
25	CFXEXTW	Attachmate for Windows/NetWare 3270 LAN Professional
26	CFXIRMW	Irma Workstation for Windows
27	CFXCMGX	OS/2 EE Communications Manager
28	CFXDFTX - non-SF	cfDFT without SF Support
29	CFXRUMB	Rumba for Windows
30	CFXEICO	Eicon for Windows
31	CFXIBMW	IBM Personal Communications Version 2.x/3.x/4.x for Windows
34	CFXDYNC	Dynacomm Elite for Windows
50	CFXNVLW	Novell LAN Workstation/Win
52	CFXWHLL	Windows WOSA HLLAPI
53	CFXOMNW	ICOT Omnipath for Windows
55	CFXIBWS	Personal Communications for Windows, with SF support
61	CFXCMGS	OS/2 EE Comm Mgr/SF
62	CFXEXTO	Extra! for OS/2 (not SF!)
75	CFXWHLL3	Win32 WOSA HLLAPI
76	CFXRUMO	Rumba for OS/2 (not SF!)
80	CFX147W	Memorex Telex 1472 for Windows
85	CFXRUMB3	Win32 Rumba for NT
95	CFXEXTW3	Win32 Extra! for NT/95
123	CFXNSEL3	NS/Elite for Win32
124	CFXWRQI3	WRQ Reflection for IBM Win32
126	CFXIBMW3	Personal Communications for Win95
127	CFXIBWS3	Personal Comm for Win95 - SF
146	CFXPSPW3	Zephyr Passport 3270 (Win32)
147	CFXWSRF3	ICOM WinSurf+ 3270 (Win32)
148	CFXBLUE3	NewHart Systems Blues (Win32)

6.10   <u>MAINCON Panel C1, Multi-host Session (continued)</u>

```
_____        ┌─────────────────────────────────┐        _____
                           │       ACROSS-THE-BOARDS(r)  Config │
                           └─────────────────────────────────┘

                       ----- Any HLLAPI, PS-API or cfDFT -----

Host Session letter..................... E
Process EABs............................ N
Trace HLLAPI Calls...................... N




















If using cfDFT or any HLLAPI / PS-API interface where a Host Session letter can
be specified, then enter the Host Session letter here (usually A-E).

F10: write config to disk   Esc: Exit
```

1.   **Host Session**

Host session is a single upper case letter SHORT NAME of the session in multi-host-session environments to be accessed. The default is session E.

Many PS-API and HLLAPI interfaces use host session SHORT NAME SERIES beginning with letters other than E. Some even allow single digit numbers as the SHORT NAME. You must configure on a product by product basis for this parameter.

6.10   MAINCON Panel C1, Multi-host Session (continued)

2.   Process EABs

Some HLLAPI implementations do not support EABs properly. Specify 'Y' only if you require EABs.
EABs will only be returned if the underlying emulator is configured to return them.

> **NOTES**: The following drivers never return EABs:
>
> | | |
> |---|---|
> | 3 - CFX327X | 30 - CFXEICO |
> | 13 - CFXLV3X | 34 - CFXDYNC |
> | 25 - CFXEXTW | 52 - CFXWHLL |

The following drivers return EABs if "Process EABs" is 'Y', or the driver is older than 11/04/93.

14 - CFXHLLX	55 - CFXIBWS
26 - CFXIRMW	61 - CFXCMGS
27 - CFXCMGX	62 - CFXEXTO
29 - CFXRUMB	75 - CFXWHLL3
31 - CFXIBMW	76 - CFXRUMO
50 - CFXNVLW	80 - CFX147W
53 - CFXOMNW	

The following drivers always return EABs.

> 23 - CFXDFTX
> 28 - CFXDFTX - non-SF

3.   HLLAPI Trace

Enables a trace of all HLLAPI functions called during the operation of this driver. As of 11/23/93, the
following drivers will produce a HLLAPI trace:

14 CFXHLLX	31 CFXIBMW	61 CFXCMGS
25 CFXEXTW	34 CFXDYNC	62 CFXEXTO
26 CFXIRMW	50 CFXNVLW	75 CFXWHLL3
27 CFXCMGX	52 CFXWHLL	76 CFXRUMO
29 CFXRUMB	53 CFXOMNW	80 CFX147W
30 CFXEICO	55 CFXIBWS	

6.11 MAINCON Panel C2
cfDFT Coax

Configuration filename: MAINCFG.DFT

Used by cf Device Drivers:

#	Name	Description
23	CFXDFTX, CFXDFTN, CFXDFTS	cfDFT
28	CFXDFTX, CFXDFTN, CFXDFTS	cfDFT without SF Support

```
_____      ╔═══════════════════════════╗      _____
                      ║     ACROSS-THE-BOARDS(r)  Config     ║
                      ╚═══════════════════════════╝

                      ------- cfDFT via IBM Coax Card --------

First coax card port address (in hex)... 2D0
Coax card RAM address (in hex).......... CE00
Number of host sessions (1 to 5)........ 1
Coax-card Interrupt Enabled (Y/N)....... Y
Power-On-Reset wait time seconds........ 30
Trace size in K bytes................... 0
The CFXDFT interrupt number (in hex).... 60
3270 Controller type (Non-SNA or SNA)... N
Session 1 model and EAB support......... 2




If card I/O addresses were changed from hex 2D0, enter new I/O address here.


F10: write config to disk   Esc: Exit
```

1. **I/O Port Origin**
    If the I/O port base address on the IBM 3279/79, IBM 3270 Connection Card, or compatible coax card has been changed from the normal 2D0h, this field must be configured.

2. **RAM Address**
    If the shared RAM address on the IBM 3279/79, IBM 3270 Connection Card, or compatible coax card has been changed from the normal 2D0h, this field must be configured.

3. **Number of Host Sessions**
    The number of host sessions ('1' to '5') to be configured.

4. **Adapter Interrupt Available**
    Most IBM 3278/79 cards, IBM 3270 Connection cards and compatibles support IRQ2. If the card does not support interrupts, or IRQ2 conflicts with other system usage, specifing 'N' will avoid the use of interrupts. The default of 'Y' will cause cfDFT to use interrupts.

5. **P-O-R Wait Time**
    The amount of time cfDFT will wait for the controller to respond to a Power-On-Reset of the 3278/79 card. The default (and minimum) value is 10 seconds.

6.11   MAINCON Panel C2, cfDFT Coax (continued)

6.   **Trace Size in KB**

Defines the size of the allocated trace buffer in KB. If zero, the cfDFT trace is disabled. Specifying an odd trace size will perform a "before and after" trace, an even trace size will trace before or after as is appropriate for the event being traced. In general, the cfDFT trace should only be enabled when instructed to do so by cfSOFTWARE. cfSOFTWARE will also specify the type of trace required.

7.   **cf INT**

cfDFT requires a software interrupt for communications to the loaded cfDFT TSR. The default of 60h is acceptable unless it conflicts with other software in the PC. 60h through 6Fh are valid entries.

8.   **SNA, Non-SNA**

'S' if the attached 3174 controller is SNA, 'N' if the controller is non-SNA.

9.   **Session # Model/EAB**

The 3270 model to use. '2' = 24x80, '3' = 32x80, '4' = 43x80, '5' = 27x132. If followed by an 'E' (e.g., '2E', '3E', '4E' or '5E'), then Extended Attribute Bytes (EABs) will be supported. Each host session may have a different model configured.

6.12 MAINCON Panel C3
PCOX/CXI/Novell

Configuration filename: MAINCFG.PCX

Used by cf Device Drivers:

#	Name	Description
2	CFXPCOX	PCOX/CXI

```
_____     _____     _____
                     |                            |
                     |   ACROSS-THE-BOARDS(r)  Config   |
                     |_____|

                ----------- PCOX/CXI/Novell ------------
Novell API interrupt number (in hex).... 6F
Host Session letter....................




If the PCOX/CXI/NOVELL API interrupt number has been changed from hex 6F
(decimal 111), enter the new interrupt number here.

F10: write config to disk   Esc: Exit
```

1. **API Interrupt Number**

   This number for PCOX/CXI/Novell defaults to decimal 111 (hex 6F). If the PCOX/CXI/Novell emulation software has been configured for some other API interrupt number, then that new number must be indicated here.

2. **Host Session**

   Host session is a single upper case letter indicating which session in multi-host-session environments is to be accessed. The default is session E. If single session or if the E session is to be chosen, you may leave this field blank (hex 20).

6.13 MAINCON Panel C4
Banyan VINES

Configuration filename: MAINCFG.VIN

Used by cf Device Drivers:

#	Name	Description
20	CFXVINX	Banyan VINES

```
_____        ACROSS-THE-BOARDS(r)  Config        _____


                  ------------- Banyan VINES -------------

Logical unit (LU)....................... 0
Host Session letter.....................










Specify the specific active LU to use or leave zero to use the Host Session
letter to select a relative LU.

F10: write config to disk   Esc: Exit
```

1. **Logical Unit**

    The specific logical unit number to access. This must match a configured LU number in the emulation/gateway software. To use the Host Session to select one of the LUs attached to the PC, enter 0.

2. **Host Session**

    Host session is a single upper case letter indicating which active session (LU) to use. If the LU number is zero, 'A' will select the first active LU, 'B' the second active LU, etc.

6.14   MAINCON Panel D1
COMM Port Assignment

Configuration filename: MAINCFG.POR

Used by cf Device Drivers:

#	Name	Description
9	CFXPROX, CFXPROI, CFXPRO	IBM 3101 Protocol Converter
16	CFXDECX, CFXDECI, CFXDECN	DEC VT100 Protocol Converter
17	CFX232X, CFX232I, CFX232N	PC-to-PC RS232
21	CFXTTYX, CFXTTYI, CFXTTYN	Async TTY
22	CFXTYMX, CFXTYMI, CFXTYMN	Tymnet78

insert D1 (NEW SCREEN SHOT)

```
_____      ┌───────────────────────────────────┐      _____
                       │       ACROSS-THE-BOARDS(r)  Config │
                       └───────────────────────────────────┘

                       ---Communication Port Assignments---

  Comm   Type    -------------------- Parameters --------------------
    1
    2
    3     COMM    I/O Port: 03E8   IRQ: 04
    4
    5     NASI    Name: NACS01
    6
    7     INT14   Port: 07 Dialect: 0
    8
    9
   10
   11
   12
   13
   14
   15

Enter connection type (COMM, NASI, INT14).  COMM is for a normal serial port,
NASI=NetWare Async Services, INT14=Interrupt 14h.
F10:write config  Esc:Exit  F1:help
```

1. **General Format**

    This configuration file consists of 15 records. One for each configurable serial device in *Across the Boards*/DOS. Each entry is 40 bytes long, and is identified by the first byte. If entries 1 or 2 are not specified (the type byte is 00h), the normal COM1 and COM2 definitions will be assumed if the driver is directed to open COMM ports 1 or 2. Any other COMM port must be defined in this configuration file. Note that the definition of COM1 and COM2 may be changed. The second byte of each configuration record is reserved, and must be set to 00h.

6.14   MAINCON Panel D1, COMM Port Assignment (continued)

2.   Type 'C' (COMM Port)

This identifies the serial device as a standard 8250 compatible serial port. Serial *Across the Boards* device driver (CFXPROX, CFXDECX and CFXTYMX) will program the serial port directly. The following fields are required for a Type 'C' record:

2.1. I/O Port Origin Address

The address of the first I/O port of the 8250. Any value 0000h through FFF8h may be specified, but this field must correspond to the actual hardware.

Standard Assignments for all PC's

COM1: 3F8   IRQ4   COM2: 2F8   IRQ3

Typical Assignments for IBM PS/2

COM3: 3220   IRQ3   COM6: 4228   IRQ3
COM4: 3228   IRQ3   COM7: 5220   IRQ3
COM5: 4220   IRQ3   COM8: 5228   IRQ3

Typical Assignments for XT/AT

COM3: 3E8   IRQ4   COM6: (Varies)
COM4: 2E8   IRQ3   COM7: (Varies)
COM5: (Varies)   COM8: (Varies)

2.2. IRQ Number

The hardware interrupt used by the configured serial port. Any value 2 through 15, excluding 9 and 14, may be specified, but this field must correspond to the actual hardware. *See the table under #3 I/O Port Origin Address (above) for typical values*.

3.   Type 'N' (Novell NASI)

This identifies the serial device as a NASI compatible async or modem server. Serial *Across the Boards* device drivers (CFXPRON, CFXDECN and CFXTYMN) will use the INT 6Bh API provided by the NASI redirector. The following field is required for a Type 'N' record:

3.1. Resource Name

24 bytes. The name given to the port on the NACS/NASI server. This name will be tried as a Specific Name, and if not found, will be tried as a General Name.

6.14 MAINCON Panel D1, COMM Port Assignment (continued)

4. Type 'I' (INT 14)

This identifies the serial device as a INT 14 compatible async or modem server. Serial *Across the Boards* device drivers (CFXPROI, CFXDECI and CFXTYMI) will use the INT 14h API provided by the INT 14 redirector.

> **Programming note**: The basic dialect of the INT 14 interface is identical to the IBM PC BIOS INT 14h serial port services. The *Across the Boards* device drivers can actually make use of the BIOS INT 14h services - however data loss is almost guarenteed as the BIOS INT 14h interface is not interrupt driven and is completely unbuffered. The following fields are required for a Type 'I' record:

4.1. COMM Port Number

The serial port to use (1 to 15). This must match the configuration of the INT 14 redirector.

INT 14 Dialect Multiple dialects of the INT 14 API exist. *Across the Boards*/DOS currently supports two. The basic dialect ('0') and the the Modem Assist Extended dialect ('1'). These dialects are described below:

> Basic Dialect ('0')
> - Uses only BIOS INT 14h services
> - Supports only 300, 1200, 2400, 4800 and 9600bps
> - Does not support the MODEM-ON, MODEM-OFF, LINEBREAK or LINEDROP
>   functions

> Modem Assist Extended Dialect ('1')
> - Supports all the functions of the Basic Dialect
> - Adds support for 19,200bps
> - Adds support for the MODEM-ON, MODEM-OFF, LINEBREAK and LINEDROP
>   functions

6.15   MAINCON Panel D2
IBM 3101

Configuration filename: MAINCFG.PRX

Used by cf Device Drivers:

#	Name	Description
9	CFXPROX, CFXPROI, CFXPRON, HYDPROX, HYDPROI, HYDPRON	IBM 3101 Protocol Converter

For DOS, CFXPROX is the direct to COMM port driver, CFXPROI is the INT 14h driver, and CFXPRON in the NASI driver. The correct driver is automatically loaded as defined in MAINCFG.POR. For Windows and OS/2, CFXPROX supports all functions.

```
_____        ┌─────────────────────────────────┐        _____
                         │      ACROSS-THE-BOARDS(r)  Config │
                         └─────────────────────────────────┘
                                                                Page  1 of  6

                         ---- Protocol Converter (IBM 3101) -----

Auto-wrap? (0=No, 1=Yes)................ 0
Reset needed after BELL? (0=No, 1=Yes).. 0
XON/XOFF (in hex) FF if no XON/XOFF..... 11    13
Hardware flow control (0/1/2)........... 0
Flicker check time (in 100ths second)... 0
Keystroke delay (in milliseconds)....... 0
COMM port (1 - 15)...................... 1
Line Speed/Parity/Data bits/Stop bits... 1200  E     7     1
Attributes (0 or 1)..................... 0
Half Duplex (0 or 1).................... 0
Print routing (in hex).................. 00




If the protocol converter assumes that the 3101 automatically does a carriage
return at the end of a line, enter 1.

F10: write config to disk   Esc: Exit  PgDn: config 3101 key values
```

1. **Autowrap**

   When set to '1', this switch causes the cursor to wrap to the beginning of the next line automatically when the last position in a line is written to by the protocol converter.

2. **BEL reset**

   If the protocol converter locks the keyboard after sending a BELL character, setting this switch to '1' will cause a RESET key sequence to be sent after receiving a BELL. The RESET key is defined in the 3101 KEY TABLE.

3. **XON**

   If the protocol converter uses XON/XOFF pacing, specify the XON character used in this field. Use 0FFh for no XON/XOFF processing. 11h is the standard XON.

4. **XOFF**

   If the protocol converter uses XON/XOFF pacing, specify the XOFF character used in this field. Use 0FFh for no XON/XOFF processing. 13h is the standard XOFF.

6.15 MAINCON Panel D2, IBM 3101 (continued)

5. **HW Flow - Hardware Flow Control Option**

   '0'/'1'/'2' - none/CTS-RTS/DSR-DTR. Selects type of hardware flow control, usually used with error correcting modems. Setting CTS/RTS will prevent the driver from sending data unless the modem raises CTS, setting DSR/DTS prevents the driver from sending unless the modem raises DSR. CTS/RTS is most commonly used with error correcting modems.

6. **Flicker**

   Controls how much extra time (in 100ths of a second) will be spent waiting to insure that the protocol converter has stopped sending data.

7. **Keydelay**

   The number of milliseconds delay between sending characters to the protocol converter. This can be used to prevent overruns at the protocol converter.

8. **Comm**

   '1' through '9' and ':', ';', '<', '=', '>' and '?' (ASCII values 031h through 03Fh) representing COMM ports 1 through 15. For DOS, COM1 and COM2 are predefined, and any other values require a MAINCFG.POR. For Windows and OS/2, COM1 through COM9 may be specified.

9. **Baud**

   The required baud rate. 300=300bps, 1200=1200bps, 2400=2400bps, 4800=4800bps, 9600=9600bps, 144=14400bps, 192=19.2kbps, 18=19.2kbps (synonym), 288=28800bps, 38=38400bps, 56=56kbps, 115=115kbps.

   NOTE: Not all drivers and environments support all baud rates.

10. **Parity**

    'E' = Even, 'O' = Odd, 'S' = Space, 'M' = Mark, and 'N' = None.

11. **Data Bits**

    '7' or '8' data bits.

12. **Stop Bits**

    '1' or '2' stop bits.

13. **Attributes**

    Setting this switch to '1' will cause 3101 model 2x style attributes to be honored.

14. **Half-Duplex**

    Setting this field to '1' will cause the VT100 emulator to operate in half-duplex mode. Half-duplex mode is significantly inferior to full-duplex mode for terminal emulation and data transfer. Full-duplex mode should be used where ever possible.

6.15 MAINCON Panel D2, IBM 3101 (continued)

15. Print Routing

Printer passthrough support. The following values define how printer data from the protocol converter is routed:

> 00h = Print Data is discarded (default)
> 01h = Print Data sent to LPT1
> 02h = Print Data sent to LPT2
> 03h = Print Data sent to LPT3
> 04h = Print Data sent to LPT4
> 11h = Print Data sent to COM1
> 12h = Print Data sent to COM2
> 13h = Print Data sent to COM3
> 14h = Print Data sent to COM4
> 20h = Print Data written to file $$.PRN

NOTE: CFXPROX for Windows and OS/2 do not support print routing.

6.15 <u>MAINCON Panel D2, IBM 3101 (continued)</u>

These panels define what is sent to the host when the 3101 terminal is used for 3270 emulation. Each entry defines the sequence sent for a single 3270 key. For example, the 3270 protocol converter attached by the host may be configured to emulate the 3270 Clear key function when it receives the sequence Esc L. To configure that sequence, enter ESC and L in the first two fields for the CLEAR entry in the table.

A sequence of up to 4 characters may be entered for each key definition. Only one character may be entered in each field.

> **NOTES**:
>
> It is possible to redefine the normal printable character keys as well as the 3270 control and function keys, (for example, the A key could be redefined), but this should almost never be done.
>
> Each field may be coded. *See Section 7.5 MAINCON ASCII Characters*.
>
> BRK may be coded as the first field in a key definition.
>
> The sequences entered should match the configuration of the protocol converter. This information should be available from the mainframe System's Programmer.
>
> For APPX and *pcMAINFRAME* usage, at least the definitions for RESET, ENTER and CLEAR should be correct.

```
_____          ACROSS-THE-BOARDS(r)  Config          _____

                                                           Page  2 of  6

                          IBM 3101 - ASCII Key Values
  ----3101----  -----PC ASCII------       ----3101----  -----PC ASCII------
  ENTER         CR                         PF16
  PF1           ESC  1                     PF17
  PF2           ESC  2                     PF18
  PF3           ESC  3                     PF19
  PF4           ESC  4                     PF20
  PF5           ESC  5                     PF21
  PF6           ESC  6                     PF22
  PF7           ESC  7                     PF23
  PF8           ESC  8                     PF24
  PF9                                      PA1           BRK
  PF10                                     PA2
  PF11                                     PA3
  PF12                                     CLEAR         ESC  L
  PF13                                     SYSREQ
  PF14                                     TEST
  PF15                                     ATTN


  F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help  F3:5250
```

6.15   MAINCON Panel D2, IBM 3101 (continued)

```
 _____  _____  _____
                  |                            |
                  |   ACROSS-THE-BOARDS(r)  Config |
                  |_____|

                                                      Page  3 of  6

                        IBM 3101 - ASCII Key Values
     ----3101----  -----PC ASCII------         ----3101----  -----PC ASCII------
     Space          SP                         0             0
     !              !                          1             1
     "              "                          2             2
     #              #                          3             3
     $              $                          4             4
     %              %                          5             5
     &              &                          6             6
     `              `                          7             7
     (              (                          8             8
     )              )                          9             9
     *              *                          :             :
     +              +                          ;             ;
     ,              ,                          <             <
     -              -                          =             =
     .              .                          >             >
     /              /                          ?             ?


     F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help  F3:5250
```

```
 _____  _____  _____
                  |                            |
                  |   ACROSS-THE-BOARDS(r)  Config |
                  |_____|

                                                      Page  4 of  6

                        IBM 3101 - ASCII Key Values
     ----3101----  -----PC ASCII------         ----3101----  -----PC ASCII------
     @              @                          P             P
     A              A                          Q             Q
     B              B                          R             R
     C              C                          S             S
     D              D                          T             T
     E              E                          U             U
     F              F                          V             V
     G              G                          W             W
     H              H                          X             X
     I              I                          Y             Y
     J              J                          Z             Z
     K              K                          ¢             [
     L              L                          \             \
     M              M                          ¦             ]
     N              N                          ¬             ^
     O              O                          _             _


     F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help  F3:5250
```

6.15   <u>MAINCON Panel D2, IBM 3101 (continued)</u>

```
_____        ACROSS-THE-BOARDS(r)  Config        _____


                                                          Page  5 of  6

                        IBM 3101 - ASCII Key Values
  ----3101----  -----PC ASCII------        ----3101---- -----PC ASCII------
  `             `                          p            p
  a             a                          q            q
  b             b                          r            r
  c             c                          s            s
  d             d                          t            t
  e             e                          u            u
  f             f                          v            v
  g             g                          w            w
  h             h                          x            x
  i             i                          y            y
  j             j                          z            z
  k             k                          {            {
  l             l                          |            |
  m             m                          }            }
  n             n                          ~            ~
  o             o                          ↑ arrow      ESC  A


F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help  F3:5250
```

```
_____        ACROSS-THE-BOARDS(r)  Config        _____


                                                          Page  6 of  6

                        IBM 3101 - ASCII Key Values
  ----3101----  -----PC ASCII------        ----3101---- -----PC ASCII------
  ↓ arrow       ESC  B                     –
  ← arrow       ESC  D                     –
  → arrow       ESC  C                     TAB forward  TAB
  –                                        TAB backwrd
  –                                        HOME         ESC  H
  Crsr_Sel                                 BACKSPACE    BS
  –                                        —>> arrow
  ERASE EOF     ESC  I                     <<— arrow
  –                                        ↵ new line   CR   LF
  –                                        RESET        ^R
  DUP                                      ERASE INPUT  ESC  K
  MARK                                     –
  INSERT                                   IDENT
  DELETE        7FH                        DVC_CANCEL
  –                                        LIGHT PEN
  –                                        –


F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help  F3:5250
```

6.16 MAINCON Panel D3
DEC VT100

Configuration filename: MAINCFG.DEC

Used by cf Device Drivers:

#	Name	Description
16	CFXDECX, CFXDECI, CFXDECN	DEC VT100 Protocol Converter

For DOS, CFXDECX is the direct to COMM port driver, CFXDECI is the INT 14h driver, and CFXDECN in the NASI driver. The correct driver is automatically loaded as defined in MAINCFG.POR. For Windows and OS/2, CFXDECX supports all functions.

```
_____          _____          _____
                       |    ACROSS-THE-BOARDS(r)  Config    |
                       |_____|

                                                              Page  1 of  6

                       ---- Protocol Converter (DEC VT100) ----

Autowrap (0, 1, or 2).................. 0
Reset needed after BELL? (0=No, 1=Yes).. 0
XON/XOFF (in hex) FF if no XON/XOFF..... 11    13
Hardware flow control (0/1/2)........... 0
Flicker check time (in 100ths second)... 0
Keystroke delay (in milliseconds)....... 0
COMM port (1 - 15)...................... 0
Line Speed/Parity/Data bits/Stop bits... 1200  E     7     1
Attributes (0 or 1)..................... 0
Half duplex (0 or 1).................... 0
Print routing (in hex).................. 00




0: CR treated as CRLF and LF is ignored.  1: same as 0 but CR is treated as CRLF
even after autowrap.  2: CR treated as CR and LF treated as LF.

F10: write config to disk   Esc: Exit  PgDn: config VT100 key values
```

1. **Autowrap**

    When set to '1', this switch causes the cursor to wrap to the beginning of the next line automatically when the last position in a line is written to by the protocol converter.

2. **BEL Reset**

    If the protocol converter locks the keyboard after sending a BELL character, setting this switch to '1' will cause a RESET key sequence to be sent after receiving a BELL. The RESET key is defined in the 3101 KEY TABLE.

3. **XON**

    If the protocol converter uses XON/XOFF pacing, specify the XON character used in this field. Use 0FFh for no XON/XOFF processing. 11h is the standard XON.

4. **XOFF**

    If the protocol converter uses XON/XOFF pacing, specify the XOFF character used in this field. Use 0FFh for no XON/XOFF processing. 13h is the standard XOFF.

6.16 <u>MAINCON Panel D3, DEC VT100 (continued)</u>

5. HW Flow - Hardware Flow Control Option

'0'/'1'/'2' - none/CTS-RTS/DSR-DTR. Selects type of hardware flow control, usually used with error correcting modems. Setting CTS/RTS will prevent the driver from sending data unless the modem raises CTS, setting DSR/DTS prevents the driver from sending unless the modem raises DSR. CTS/RTS is most commonly used with error correcting modems.

6. Flicker

Controls how much extra time (in 100ths of a second) will be spent waiting to insure that the protocol converter has stopped sending data.

7. Keydelay

The number of milliseconds delay between sending characters to the protocol converter. This can be used to prevent overruns at the protocol converter.

8. Comm

'1' through '9' and ':', ';', '<', '=', '>' and '?' (ASCII values 031h through 03Fh) representing COMM ports 1 through 15. For DOS, COM1 and COM2 are predefined, and any other values require a MAINCFG.POR. For Windows and OS/2, COM1 through COM9 may be specified.

9. Baud

The required baud rate. 300=300bps, 1200=1200bps, 2400=2400bps, 4800=4800bps, 9600=9600bps, 144=14400bps, 192=19.2kbps, 18=19.2kbps (synonym), 288=28800bps, 38=38400bps, 56=56kbps, 115=115kbps.

NOTE: Not all drivers and environments support all baud rates.

10. Parity

'E' = Even, 'O' = Odd, 'S' = Space, 'M' = Mark, and 'N' = None.

11. Data Bits

'7' or '8' data bits.

12. Stop Bits

'1' or '2' stop bits.

13. Attributes

Setting this field to '1' will cause VT100 attributes to be honored, and an attribute shadow buffer to be maintained. '2' is obsolete and will produce the same result as '1'.

14. Half-Duplex

Setting this field to '1' will cause the VT100 emulator to operate in half-duplex mode. Half-duplex mode is significantly inferior to full-duplex mode for terminal emulation and data transfer. Full-duplex mode should be used where ever possible.

6.16   MAINCON Panel D3, DEC VT100 (continued)

15. Print Routing

Printer passthrough support. The following values define how printer data from the protocol converter is routed:

> 00h = Print Data is discarded (default)
> 01h = Print Data sent to LPT1
> 02h = Print Data sent to LPT2
> 03h = Print Data sent to LPT3
> 04h = Print Data sent to LPT4
> 11h = Print Data sent to COM1
> 12h = Print Data sent to COM2
> 13h = Print Data sent to COM3
> 14h = Print Data sent to COM4
> 20h = Print Data written to file $$.PRN

NOTE: CFXDECX for Windows and OS/2 do not support print routing.

6.16   <u>MAINCON Panel D3, DEC VT100 (continued)</u>

These panels define what is sent to the host when the VT100 terminal is used for 3270 emulation. Each entry defines the sequence sent for a single 3270 key. For example, the 3270 protocol converter attached by the host may be configured to emulate the 3270 Clear key function when it receives the sequence Esc L. To configure that sequence, enter ESC and L in the first two fields for the CLEAR entry in the table.

A sequence of up to 4 characters may be entered for each key definition. Only one character may be entered in each field.

NOTES:

It is possible to redefine the normal printable character keys as well as the 3270 control and function keys, (for example, the A key could be redefined), but this should almost never be done.

Each field may be coded. *See Section 7.5 MAINCON ASCII Characters*.

BRK may be coded as the first field in a key definition.

The sequences entered should match the configuration of the protocol converter. This information should be available from the mainframe System's Programmer.

For APPX and pcMAINFRAME usage, at least the definitions for RESET, ENTER and CLEAR should be correct.

```
 _____        _____        _____
                        |                        |
                        |  ACROSS-THE-BOARDS(r)  Config   |
                        |_____|
                                                            Page  2 of  6

                         DEC VT100 - ASCII Key Values
  ---VT100----  -----PC ASCII------        ---VT100----  -----PC ASCII------
  ENTER         CR                         PF16
  PF1           ESC  1                     PF17
  PF2           ESC  2                     PF18
  PF3           ESC  3                     PF19
  PF4           ESC  4                     PF20
  PF5           ESC  5                     PF21
  PF6           ESC  6                     PF22
  PF7           ESC  7                     PF23
  PF8           ESC  8                     PF24
  PF9           ESC  9                     PA1           BRK
  PF10          ESC  0                     PA2
  PF11                                     PA3
  PF12                                     CLEAR         ^Z
  PF13                                     SYSREQ
  PF14                                     TEST
  PF15                                     ATTN


  F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help  F3:5250
```

6.16   MAINCON Panel D3, DEC VT100 (continued)

```
_____      _____      _____
                   |  ACROSS-THE-BOARDS(r)  Config  |
                   |_____|

                                                        Page  3 of  6

                       DEC VT100 - ASCII Key Values
   ---VT100----  -----PC ASCII------         ---VT100----  -----PC ASCII------
   Space         SP                          0             0
   !             !                           1             1
   "             "                           2             2
   #             #                           3             3
   $             $                           4             4
   %             %                           5             5
   &             &                           6             6
   `             `                           7             7
   (             (                           8             8
   )             )                           9             9
   *             *                           :             :
   +             +                           ;             ;
   ,             ,                           <             <
   -             -                           =             =
   .             .                           >             >
   /             /                           ?             ?


   F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help  F3:5250
```

```
_____      _____      _____
                   |  ACROSS-THE-BOARDS(r)  Config  |
                   |_____|

                                                        Page  4 of  6

                       DEC VT100 - ASCII Key Values
   ---VT100----  -----PC ASCII------         ---VT100----  -----PC ASCII------
   @             @                           P             P
   A             A                           Q             Q
   B             B                           R             R
   C             C                           S             S
   D             D                           T             T
   E             E                           U             U
   F             F                           V             V
   G             G                           W             W
   H             H                           X             X
   I             I                           Y             Y
   J             J                           Z             Z
   K             K                           ¢             [
   L             L                           \             \
   M             M                           ¦             ]
   N             N                           ¬             ^
   O             O                           _             _


   F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help  F3:5250
```

6.16   <u>MAINCON Panel D3, DEC VT100 (continued)</u>

```
_____         ACROSS-THE-BOARDS(r)  Config         _____

                                                                 Page  5 of  6

                         DEC VT100 - ASCII Key Values
    ---VT100----  -----PC ASCII------          ---VT100----  -----PC ASCII------
    `             `                            p             p
    a             a                            q             q
    b             b                            r             r
    c             c                            s             s
    d             d                            t             t
    e             e                            u             u
    f             f                            v             v
    g             g                            w             w
    h             h                            x             x
    i             i                            y             y
    j             j                            z             z
    k             k                            {             {
    l             l                            |             |
    m             m                            }             }
    n             n                            ~             ~
    o             o                            ↑ arrow       ESC  [    A


  F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help  F3:5250
```

```
_____         ACROSS-THE-BOARDS(r)  Config         _____

                                                                 Page  6 of  6

                         DEC VT100 - ASCII Key Values
    ---VT100----  -----PC ASCII------          ---VT100----  -----PC ASCII------
    ↓ arrow       ESC  [    B                   –
    ← arrow       ESC  [    D                   –
    → arrow       ESC  [    C                   TAB forward   TAB
    –                                           TAB backwrd
    –                                           HOME          ESC  H
    Crsr_Sel                                    BACKSPACE     BS
    –                                           —>> arrow
    ERASE EOF     ESC  [    K                   <<— arrow
    –                                           ↵ new line    LF
    –                                           RESET         ^R
    DUP                                         ERASE INPUT
    MARK                                        –
    INSERT                                      IDENT
    DELETE        7FH                           DVC_CANCEL
    –                                           LIGHT PEN
    –                                           –


  F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help  F3:5250
```

6.17   MAINCON Panel D4
Tymnet78

Configuration filename: MAINCFG.TYM

Used by cf Device Drivers:

#	Name	Description
22	CFXTYMX, CFXTYMI, CFXTYMN	Tymnet78

For DOS, CFXTYMX is the direct to COMM port driver, CFXTYMI is the INT 14h driver, and CFXTYMN in the NASI driver. The correct driver is automatically loaded as defined in MAINCFG.POR. For Windows and OS/2, CFXTYMX supports all functions.

```
_____          ACROSS-THE-BOARDS(r)  Config        _____

                                                                 Page  1 of  6

                        ---- Protocol Converter (TYMNET78) -----
Scroll (Y/N)............................ Y
Print routing (in hex).................. 00
XON/XOFF (in hex) FF if no XON/XOFF..... 11    13
Hardware flow control (0/1/2)........... 0
Flicker check time (in 100ths second)... 0
Keystroke delay (in milliseconds)....... 0
COMM port (1 - 15)...................... 1
Line Speed/Parity/Data bits/Stop bits... 1200  E     7     1
Attributes (Y or N)..................... Y




If the screen is to scroll in full-duplex mode (before the TYMNET78 logon),
enter Y.

F10: write config to disk   Esc: Exit  PgDn: config TYM78 key values
```

1. **Scroll**

   While not actually connected to the Tymnet78 protocol converter (for instance, while sending commends to dial the modem), this field controls whether the screen scrolls or wraps. If 'Y', the screen will scroll, any other value will cause the screen to wrap.

6.17 MAINCON Panel D4, Tymnet78 (continued)

2. Print Routing

Printer passthrough support. The following values define how printer data from the Tymnet78 protocol converter is routed:

> 00h = Print Data is discarded (default)
> 01h = Print Data sent to LPT1
> 02h = Print Data sent to LPT2
> 03h = Print Data sent to LPT3
> 04h = Print Data sent to LPT4
> 11h = Print Data sent to COM1
> 12h = Print Data sent to COM2
> 13h = Print Data sent to COM3
> 14h = Print Data sent to COM4
> 20h = Print Data written to file $$.PRN

NOTE: CFXTYMX for Windows does not support print routing.

3. XON

If the protocol converter uses XON/XOFF pacing, specify the XON character used in this field. Use 0FFh for no XON/XOFF processing. 11h is the standard XON.

4. XOFF

If the protocol converter uses XON/XOFF pacing, specify the XOFF character used in this field. Use 0FFh for no XON/XOFF processing. 13h is the standard XOFF.

5. HW Flow - Hardware Flow Control Option

'0'/'1'/'2' - none/CTS-RTS/DSR-DTR. Selects type of hardware flow control, usually used with error correcting modems. Setting CTS/RTS will prevent the driver from sending data unless the modem raises CTS, setting DSR/DTS prevents the driver from sending unless the modem raises DSR. CTS/RTS is most commonly used with error correcting modems.

6. Flicker

Controls how much extra time (in 100ths of a second) will be spent waiting to insure that the protocol converter has stopped sending data.

7. Keydelay

The number of milliseconds delay between sending characters to the protocol converter. This can be used to prevent overruns at the protocol converter.

8. Comm

'1' through '9' and ':', ';', '<', '=', '>' and '?' (ASCII values 031h through 03Fh) representing COMM ports 1 through 15. For DOS, COM1 and COM2 are predefined, and any other values require a MAINCFG.POR. For Windows and OS/2, COM1 through COM9 may be specified.

9. Baud

The required baud rate. 300=300bps, 1200=1200bps, 2400=2400bps, 4800=4800bps, 9600=9600bps, 144=14400bps, 192=19.2kbps, 18=19.2kbps (synonym), 288=28800bps, 38=38400bps, 56=56kbps, 115=115kbps.

NOTE: Not all drivers and environments support all baud rates.

6.17   MAINCON Panel D4, Tymnet78 (continued)

10. Parity

'E' = Even, 'O' = Odd, 'S' = Space, 'M' = Mark, and 'N' = None.

11. Data Bits

'7' or '8' data bits.

12. Stop Bits

'1' or '2' stop bits.

13. Attributes

This field control whether or not 3270 attributes are to be interpreted. Setting this field to 'N' will cause 3270 attributes to be ignored, any other value will cause normal interpretation of 3270 attributes. In general, this field should never be set to 'N'.

6.17 <u>MAINCON Panel D4, Tymnet78 (continued)</u>

NOTE: The key definitions for the Tymnet78 driver should not normally be changed from the defaults.

These panels define what is sent to the host when the VT220/VT320 terminal is used for 3270 emulation. Each entry defines the sequence sent for a single 3270 key. For example, the 3270 protocol converter attached by the host may be configured to emulate the 3270 Clear key function when it receives the sequence Esc L. To configure that sequence, enter ESC and L in the first two fields for the CLEAR entry in the table.

A sequence of up to 32 characters may be entered for each key definition. Only one character may be entered in each field.

> **NOTES**:
>
> It is possible to redefine the normal printable character keys as well as the 3270 control and function keys, (for example, the A key could be redefined), but this should almost never be done.
>
> Each field may be coded. *See Section 7.5 MAINCON ASCII Characters.*
>
> BRK may be coded as the first field in a key definition.
>
> The sequences entered should match the configuration of the protocol converter. This information should be available from the mainframe System's Programmer.
>
> For APPX and pcMAINFRAME usage, at least the definitions for RESET, ENTER and CLEAR should be correct.

```
 _____    ┌─────────────────────────────────┐    _____
                        │       ACROSS-THE-BOARDS(r)  Config │
                        └─────────────────────────────────┘
                                                                    Page  2 of  6

                            TYMNET78  - ASCII Key Values
   --TYMNET78--  -----PC ASCII------        --TYMNET78--  -----PC ASCII------
   ENTER         CR                         PF16          ^B   @    CR
   PF1           ^B   1    CR                PF17          ^B   !    CR
   PF2           ^B   2    CR                PF18          ^B   "    CR
   PF3           ^B   3    CR                PF19          ^B   #    CR
   PF4           ^B   4    CR                PF20          ^B   $    CR
   PF5           ^B   5    CR                PF21          ^B   %    CR
   PF6           ^B   6    CR                PF22          ^B   &    CR
   PF7           ^B   7    CR                PF23          ^B   `    CR
   PF8           ^B   8    CR                PF24          ^B   (    CR
   PF9           ^B   9    CR                PA1           ^B   )    CR
   PF10          ^B   :    CR                PA2           ^B   *    CR
   PF11          ^B   ;    CR                PA3           ^B   +    CR
   PF12          ^B   <    CR                CLEAR         ^C   CR
   PF13          ^B   =    CR                SYSREQ        ^Y   CR
   PF14          ^B   >    CR                ZAP-CIRCUIT   ^K   CR
   PF15          ^B   ?    CR                ATTN          ESC  :    CR


   F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.17   MAINCON Panel D4, Tymnet78 (continued)

```
 _____     _____      _____
                      | ACROSS-THE-BOARDS(r)  Config |
                      |_____|
                                                            Page  3 of  6

                              TYMNET78  - ASCII Key Values
    --TYMNET78--  -----PC ASCII------            --TYMNET78--  -----PC ASCII------
    Space         SP                             0             0
    !             !                              1             1
    "             "                              2             2
    #             #                              3             3
    $             $                              4             4
    %             %                              5             5
    &             &                              6             6
    `             `                              7             7
    (             (                              8             8
    )             )                              9             9
    *             *                              :             :
    +             +                              ;             ;
    ,             ,                              <             <
    -             -                              =             =
    .             .                              >             >
    /             /                              ?             ?


    F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
 _____     _____      _____
                      | ACROSS-THE-BOARDS(r)  Config |
                      |_____|
                                                            Page  4 of  6

                              TYMNET78  - ASCII Key Values
    --TYMNET78--  -----PC ASCII------            --TYMNET78--  -----PC ASCII------
    @             @                              P             P
    A             A                              Q             Q
    B             B                              R             R
    C             C                              S             S
    D             D                              T             T
    E             E                              U             U
    F             F                              V             V
    G             G                              W             W
    H             H                              X             X
    I             I                              Y             Y
    J             J                              Z             Z
    K             K                              ¢             [
    L             L                              \             \
    M             M                              ¦             ]
    N             N                              ¬             ^
    O             O                              _             _


    F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.17   <u>MAINCON Panel D4, Tymnet78 (continued)</u>

```
_____        ACROSS-THE-BOARDS(r)  Config      _____


                                                          Page  5 of  6

                          TYMNET78  - ASCII Key Values
  --TYMNET78-- -----PC ASCII------        --TYMNET78-- -----PC ASCII------
  `            `                          p            p
  a            a                          q            q
  b            b                          r            r
  c            c                          s            s
  d            d                          t            t
  e            e                          u            u
  f            f                          v            v
  g            g                          w            w
  h            h                          x            x
  i            i                          y            y
  j            j                          z            z
  k            k                          {            {
  l            l                          |            |
  m            m                          }            }
  n            n                          ~            ~
  o            o                          ↑ arrow      ^Z


F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
_____        ACROSS-THE-BOARDS(r)  Config      _____


                                                          Page  6 of  6

                          TYMNET78  - ASCII Key Values
  --TYMNET78-- -----PC ASCII------        --TYMNET78-- -----PC ASCII------
  ↓ arrow      LF                         –
  ← arrow      ^U                         –
  → arrow      ^F                         TAB forward   TAB
  –                                       TAB backwrd   ESC  O
  –                                       HOME          ^A
  Crsr_Sel     ^X   CR                    BACKSPACE     BS
  –                                       —>> arrow
  ERASE EOF    ESC  K                     <<— arrow
  –                                       ↵ new line    ^D
  HALF-DUPLEX  H    A    L    F           RESET         ^E   CR
  DUP          ESC  ;                     ERASE INPUT   ESC  G
  MARK         ESC  <                     –
  INSERT       ESC  F                     REDISPLAY     ^V   CR
  DELETE       ESC  E                     FULL-DUPLEX   F    U    L    L
  –                                       LIGHT PEN
  –                                       –


F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.18   MAINCON Panel D5
TTY and PC-to-PC (RS232)

Configuration filename: MAINCFG.PC2

Used by cf Device Drivers:

#	Name	Description
17	CFX232X, CFX232I, CFX232N	PC-to-PC RS232
21	CFXTTYX, CFXTTYI, CFXTTYN	Async TTY

For DOS, CFX232X and CFXTTYX are the direct to COMM port drivers, CFX232I and CFXTTYI are the INT 14h drivers, and CFX232N and CFX232I are the NASI drivers. The correct driver is automatically loaded as defined in MAINCFG.POR. For Windows and OS/2, CFX232X and CFXTTYX support all functions.

```
 _____          ┌─────────────────────────────────┐        _____
                            │       ACROSS-THE-BOARDS(r)  Config  │
                            └─────────────────────────────────┘

                            ----------- TTY and PC-to-PC -----------

Hardware flow control (0/1/2)........... 0
Keystroke delay (in milliseconds)....... 0
COMM port (1 - 15)...................... 1
Line Speed.............................. 1200
Line parity............................. E
Data bits (7 or 8)...................... 7
Stop bits (1 or 2)...................... 1
Main escape code (hex).................




Type of hardware flow control:  0 = None, 1 = RTS/CTS, 2 = DSR/DTR.  Select
RTS/CTS for modems with error correction or compression.

F10: write config to disk   Esc: Exit
```

1. **HW Flow - Hardware Flow Control Option**

    '0'/'1'/'2' - none/CTS-RTS/DSR-DTR. Selects type of hardware flow control, usually used with error correcting modems. Setting CTS/RTS will prevent the driver from sending data unless the modem raises CTS, setting DSR/DTS prevents the driver from sending unless the modem raises DSR. CTS/RTS is most commonly used with error correcting modems.

2. **Keydelay**

    The number of milliseconds delay between sending characters to the protocol converter. This can be used to prevent overruns at the protocol converter.

3. **Comm**

    The required baud rate. 300=300bps, 1200=1200bps, 2400=2400bps, 4800=4800bps, 9600=9600bps, 144=14400bps, 192=19.2kbps, 18=19.2kbps (synonym), 288=28800bps, 38=38400bps, 56=56kbps, 115=115kbps.

    NOTE: Not all drivers and environments support all baud rates.

6.18   MAINCON Panel D5, TTY and PC-to-PC(continued)

4.   **Parity**

'E' = Even, 'O' = Odd, 'S' = Space, 'M' = Mark, and 'N' = None.

5.   **Data Bits**

'7' or '8' data bits.

6.   **Stop Bits**

'1' or '2' stop bits.

7.   **Main Esc**

CFXTTYX use only. Leave this field set to blank. When set, this field defines a character which, when received in combination with certain other characters, will cause an error to be returned to DIALOG (and thus to the application), therefore allowing a primitive form of "escape" processing to occur. The DIALOG "ON EVENT" statement, when combined with a "QUIT" statement, provides this functionality in a more general and standard way. This is supported for compatability with existing applications only.

6.19 MAINCON Panel D6
DEC VT220

Configuration filename: MAINCFG.220

Used by cf Device Drivers:

#	Name	Description
33	CFX220X	VT220 Driver
94	CFX220X3	WOW VT220 Async

```
_____      ACROSS-THE-BOARDS(r)  Config      _____


                                                           Page  1 of 14

                    ---- Protocol Converter (DEC VT220) ----

Autowrap (0 or 1)........................ 0
Reset needed after BELL? (0=No, 1=Yes).. 0
XON/XOFF (in hex) FF if no XON/XOFF..... 11    13
Hardware flow control (0/1/2)........... 0
Flicker check time (in 100ths second)... 0
Keystroke delay (in milliseconds)....... 0
COMM port (1 - 15)...................... 1
Line Speed/Parity/Data bits/Stop bits... 1200  E    7    1
Half duplex (0 or 1).................... 0




0: Data does not wrap to next line when the margin is reached.  1: Data wraps to
the next line when margin is reached.

F10: write config to disk   Esc: Exit  PgDn: next config menu
```

1. **Autowrap**

   When set to '1', this switch causes the cursor to wrap to the beginning of the next line automatically when the last position in a line is written to by the protocol converter.

2. **BEL Reset**

   If the protocol converter locks the keyboard after sending a BELL character, setting this switch to '1' will cause a RESET key sequence to be sent after receiving a BELL. The RESET key is defined in the 3101 KEY TABLE.

3. **XON**

   If the protocol converter uses XON/XOFF pacing, specify the XON character used in this field. Use 0FFh for no XON/XOFF processing. 11h is the standard XON.

4. **XOFF**

   If the protocol converter uses XON/XOFF pacing, specify the XOFF character used in this field. Use 0FFh for no XON/XOFF processing. 13h is the standard XOFF.

6.19 MAINCON Panel D6, DEC VT220 (continued)

5. **HW Flow - Hardware Flow Control Option**

   '0'/'1'/'2' - none/CTS-RTS/DSR-DTR. Selects type of hardware flow control, usually used with error correcting modems. Setting CTS/RTS will prevent the driver from sending data unless the modem raises CTS, setting DSR/DTS prevents the driver from sending unless the modem raises DSR. CTS/RTS is most commonly used with error correcting modems.

6. **Flicker**

   Controls how much extra time (in 100ths of a second) will be spent waiting to insure that the protocol converter has stopped sending data.

7. **Keydelay**

   The number of milliseconds delay between sending characters to the protocol converter. This can be used to prevent overruns at the protocol converter.

8. **Comm**

   CFG.POR. For Windows and OS/2, COM1 through COM9 may be specified.

9. **Baud**

   The required baud rate. 300=300bps, 1200=1200bps, 2400=2400bps, 4800=4800bps, 9600=9600bps, 144=14400bps, 192=19.2kbps, 18=19.2kbps (synonym), 288=28800bps,   38=38400bps, 56=56kbps, 115=115kbps.

   NOTE: Not all drivers and environments support all baud rates.

10. **Parity**

    'E' = Even, 'O' = Odd, 'S' = Space, 'M' = Mark, and 'N' = None.

11. **Data Bits**

    '7' or '8' data bits.

12. **Stop Bits**

    '1' or '2' stop bits.

13. **Half-Duplex**

    Setting this field to '1' will cause the VT220 emulator to operate in half-duplex mode. Half-duplex mode is significantly inferior to full-duplex mode for terminal emulation and data transfer. Full-duplex mode should be used where ever possible.

6.19   <u>MAINCON Panel D6, DEC VT220 (continued)</u>

```
 _____    _____    _____
                    |                            |
                    |  ACROSS-THE-BOARDS(r)  Config |
                    |_____|

                                                          Page  2 of 14

                     ---- Protocol Converter (DEC VT220) ----

Machine Mode (1,2,3,4).................. 1
VT200 ID (1,2,3,4)...................... 1
User Features (0 = Unlock, 1 = Lock).... 0
Rows & Columns.......................... 1
New Line (CR/CRLF)...................... 0
Margin Bell (On/Off).................... 1
Warning Bell (On/Off)................... 1
Numeric Keypad (0/1).................... 0
Cursor Keys (0/1)....................... 0
User Defined Keys (Unlock/Lock)......... 0




Mode of operation: 1 = VT200 with 7 bit controls, 2= VT200 with 8 bit controls,
3 = VT52, 4 = VT100.

F10: write config to disk   Esc: Exit  PgDn: user def keys  PgUp: prior page
```

14. **Machine Mode**

   The VT220 emulator will operate in the selected machine mode. The possible setup values for machine mode are: '1' = VT200 CONTROL 7; '2' = VT200 CONTROL 8; '3' = VT52; '4' = VT100.

15. **VT200 ID**

   This parameter is only effective when you select VT200 for the machine mode. The display station returns the selected response for the Device Attribute command. The possible setup values for VT200 ID are: '1' = VT220; '2' = VT100; '3' = VT101; '4' = VT102.

16. **User Features**

   When '0' (UNLOCK) is selected, a host application program will be able to define TABSTOPs and lock the keyboard. When '1' (LOCK) is selected, an application program cannot define TABSTOPs or lock the keyboard.

17. **Row & Column**

   The screen size for the display. The possible setup values for Row & Column are: '1' = 24x80; '2' = 25x80; '3' = 24x132; '4' = 25x132; '5' = 27x132.

18. **New Line**

   The character(s) is generated when the Return key is pressed. '0' = CR only; '1' = CR and LF.

19. **Margin Bell**

   When '1' (ON) is selected, an audible alarm will sound when the cursor reaches the right margin; either column 73 (80- column mode) or column 125 (132-column mode). If you select '0'(Off), and the alarm will not be sounded when the right margin is reached.

6.19 <u>MAINCON Panel D6, DEC VT220 (continued)</u>

20. Warning Bell

When '1' (ON) is selected, an audible alarm will sound when an operation error occurs or the display station received control-G code. If you select '0' (Off), and then the alarm will not be sounded when error occurs or control-G received.

21. Numeric Keypad

When '0' (NORMAL) is selcted, the display station generates the corresponding ASCII character when a numeric keypad key is pressed. If you choose '1', the display station generates the application control function when a numeric keypad key is pressed.

22. Cursor Keys

When '0' (NORMAL) is selected, the display station generates the corresponding ASCII character when a cursor key is pressed. If you select '1', the display station generates the application control function when a cursor key is pressed.

23. User Defined Keys

When '1' (LOCK) is selected, the application program cannot define the function keys. If '0' (UNLOCK) is selected the application will be able to (re-)define the keys. MAINCON allows function key macros to be defined even if LOCK is chosen; however the VT220 driver will ignore macros.

6.19   MAINCON Panel D6, DEC VT220 (continued)

These panels define what is sent to the host when the host requests the Answerback string or a user defined key is sent. Each entry defines the sequence sent for one user defined key or for the answerback string. For example, the user defined key F6 might be defined to send 'ABCD' by entering A, B, C and D in the first four fields for the F6 entry in the table.

A sequence of up to 32 characters may be entered for each definition. Only one character may be entered in each field.

> **NOTE**: Each field may be coded. *See Section 7.5 MAINCON ASCII Characters.*

```
_____          ┌─────────────────────────────────┐   _____
                           │      ACROSS-THE-BOARDS(r)  Config │
                           └─────────────────────────────────┘
                                                              Page  3 of 14

                          VT220 ANSWERBACK & USER-DEFINED KEYS
  ---VT220--- ----------------------------------------------------------------
 Answer Back

  F6

  F7

  F8

  F9

  F10

  F11

  F12


F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
_____          ┌─────────────────────────────────┐   _____
                           │      ACROSS-THE-BOARDS(r)  Config │
                           └─────────────────────────────────┘
                                                              Page  4 of 14

                          VT220 ANSWERBACK & USER-DEFINED KEYS
  ---VT220--- ----------------------------------------------------------------
  F13

  F14

  F15

  F16

  F17

  F18

  F19

  F20


F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.19   MAINCON Panel D6, DEC VT220 (continued)

These panels define what is sent to the host when the VT220 terminal is used for 3270 emulation. Each entry defines the sequence sent for a single 3270 key. For example, the 3270 protocol converter attached by the host may be configured to emulate the 3270 Clear key function when it receives the sequence Esc L. To configure that sequence, enter ESC and L in the first two fields for the CLEAR entry in the table.

A sequence of up to 32 characters may be entered for each key definition. Only one character may be entered in each field.
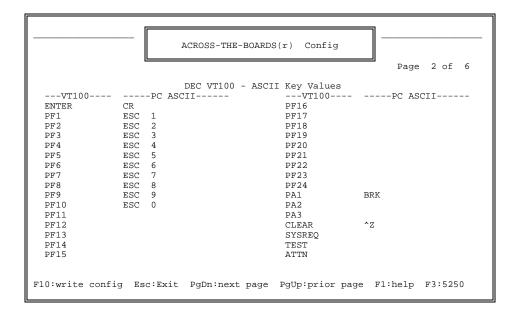
> **NOTES**:
>
> It is possible to redefine the normal printable character keys as well as the 3270 control and function keys, (for example, the A key could be redefined), but this should almost never be done.
>
> Each field may be coded. *See Section 7.5 MAINCON ASCII Characters.*
>
> BRK may be coded as the first field in a key definition.
>
> The sequences entered should match the configuration of the protocol converter. This information should be available from the mainframe System's Programmer.
>
> For APPX and pcMAINFRAME usage, at least the definitions for RESET, ENTER and CLEAR should be correct.

```
 _____    ┌─────────────────────────────┐    _____
                        │    ACROSS-THE-BOARDS(r)  Config │
                        └─────────────────────────────┘
                                                                Page  5 of 14

                             DEC VT220 ASCII KEY VALUE
   ---VT220--- -----------------ASCII VALUES-------------------------------
   ENTER       CR
   PF1         ESC 1
   PF2         ESC 2
   PF3         ESC 3
   PF4         ESC 4
   PF5         ESC 5
   PF6         ESC 6
   PF7         ESC 7
   PF8         ESC 8
   PF9         ESC 9
   PF10        ESC 0
   PF11
   PF12
   PF13
   PF14
   PF15


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.19 <u>MAINCON Panel D6, DEC VT220 (continued)</u>

```
_____     _____     _____
                        |  ACROSS-THE-BOARDS(r)  Config |
                        |_____|

                                                    Page  6 of 14

                              DEC VT220 ASCII KEY VALUE
  ---VT220--- ------------------ASCII VALUES-------------------------------
  PF16
  PF17
  PF18
  PF19
  PF20
  PF21
  PF22
  PF23
  PF24
  PA1         BRK
  PA2
  PA3
  CLEAR       ^Z
  SYSREQ
  TEST
  ATTN


  F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
_____     _____     _____
                        |  ACROSS-THE-BOARDS(r)  Config |
                        |_____|

                                                    Page  7 of 14

                              DEC VT220 ASCII KEY VALUE
  ---VT220--- ------------------ASCII VALUES-------------------------------
  Space       SP
  !           !
  "           "
  #           #
  $           $
  %           %
  &           &
  `           `
  (           (
  )           )
  *           *
  +           +
  ,           ,
  -           -
  .           .
  /           /


  F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.19   <u>MAINCON Panel D6, DEC VT220 (continued)</u>

```
 _____         _____         _____
                 |        ACROSS-THE-BOARDS(r)  Config        |
                 |_____|

                                                              Page  8 of 14

                            DEC VT220 ASCII KEY VALUE
   ---VT220--- -----------------ASCII VALUES------------------------------
   0           0
   1           1
   2           2
   3           3
   4           4
   5           5
   6           6
   7           7
   8           8
   9           9
   :           :
   ;           ;
   <           <
   =           =
   >           >
   ?           ?


   F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
 _____         _____         _____
                 |        ACROSS-THE-BOARDS(r)  Config        |
                 |_____|

                                                              Page  9 of 14

                            DEC VT220 ASCII KEY VALUE
   ---VT220--- -----------------ASCII VALUES------------------------------
   @           @
   A           A
   B           B
   C           C
   D           D
   E           E
   F           F
   G           G
   H           H
   I           I
   J           J
   K           K
   L           L
   M           M
   N           N
   O           O


   F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.19 <u>MAINCON Panel D6, DEC VT220 (continued)</u>

```
 _____      ┌─────────────────────────────┐     _____
                         │     ACROSS-THE-BOARDS(r)  Config │
                         └─────────────────────────────┘
                                                            Page 10 of 14

                              DEC VT220 ASCII KEY VALUE
   ---VT220--- -----------------ASCII VALUES--------------------------------
   P           P
   Q           Q
   R           R
   S           S
   T           T
   U           U
   V           V
   W           W
   X           X
   Y           Y
   Z           Z
   ¢           [
   \           \
   ¦           ]
   ¬           ^
   _           _


   F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
 _____      ┌─────────────────────────────┐     _____
                         │     ACROSS-THE-BOARDS(r)  Config │
                         └─────────────────────────────┘
                                                            Page 11 of 14

                              DEC VT220 ASCII KEY VALUE
   ---VT220--- -----------------ASCII VALUES--------------------------------
   `           `
   a           a
   b           b
   c           c
   d           d
   e           e
   f           f
   g           g
   h           h
   i           i
   j           j
   k           k
   l           l
   m           m
   n           n
   o           o


   F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.19 MAINCON Panel D6, DEC VT220 (continued)

```
_____        ┌────────────────────────────┐        _____
                         │    ACROSS-THE-BOARDS(r)  Config    │
                         └────────────────────────────┘
                                                                  Page 12 of 14

                            DEC VT220 ASCII KEY VALUE
    ---VT220--- ------------------ASCII VALUES-------------------------------
    p           p
    q           q
    r           r
    s           s
    t           t
    u           u
    v           v
    w           w
    x           x
    y           y
    z           z
    {           {
    |           |
    }           }
    ~           ~
    ↑ arrow     ESC [    A


    F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
_____        ┌────────────────────────────┐        _____
                         │    ACROSS-THE-BOARDS(r)  Config    │
                         └────────────────────────────┘
                                                                  Page 13 of 14

                            DEC VT220 ASCII KEY VALUE
    ---VT220--- ------------------ASCII VALUES-------------------------------
    ↓ arrow     ESC [    B
    ← arrow     ESC [    D
    → arrow     ESC [    C
    _
    _
    Crsr_Sel
    _
    ERASE EOF   ESC [    K
    _
    _
    DUP
    MARK
    INSERT
    DELETE      7FH
    _
    _


    F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.19 MAINCON Panel D6, DEC VT220 (continued)

```
_____        _____        _____
                  ACROSS-THE-BOARDS(r)  Config

                                                           Page 14 of 14

                         DEC VT220 ASCII KEY VALUE
  ---VT220--- -----------------ASCII VALUES-------------------------------
   _
   _
  TAB forward  TAB
  TAB backwrd
  HOME         ESC H
  BACKSPACE    BS
  ——>> arrow
  <<—— arrow
  ↵ new line   LF
  RESET        ^R
  ERASE INPUT
   _
  IDENT
  DVC_CAN
  LIGHT PEN
   _


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.20 MAINCON Panel D7
DEC VT320

Configuration filename: MAINCFG.320

Used by cf Device Drivers:

#	Name	Description
102	CFX320X	VT320 Driver
113	CFX320X3	WOW VT320 Async

```
_____     ┌─────────────────────────────────┐     _____
                      │        ACROSS-THE-BOARDS(r)  Config        │
                      └─────────────────────────────────┘
                                                             Page  1 of 14

                        ---- Protocol Converter (DEC VT320) ----

Autowrap (0 or 1)....................... 0
Reset needed after BELL? (0=No, 1=Yes).. 0
XON/XOFF (in hex) FF if no XON/XOFF..... 11    13
Hardware flow control (0/1/2)........... 0
Flicker check time (in 100ths second)... 0
Keystroke delay (in milliseconds)....... 0
COMM port (1 - 15)...................... 1
Line Speed/Parity/Data bits/Stop bits... 1200  E    7     1
Half duplex (0 or 1).................... 0
Transmit rate limiting (0/1)............ 0




0: Data does not wrap to next line when the margin is reached.  1: Data wraps to
the next line when margin is reached.

F10: write config to disk   Esc: Exit  PgDn: next config menu
```

1. **Autowrap**

    When set to '1', this switch causes the cursor to wrap to the beginning of the next line automatically when the last position in a line is written to by the protocol converter.

2. **BEL Reset**

    If the protocol converter locks the keyboard after sending a BELL character, setting this switch to '1' will cause a RESET key sequence to be sent after receiving a BELL. The RESET key is defined in the 3101 KEY TABLE.

3. **XON**

    If the protocol converter uses XON/XOFF pacing, specify the XON character used in this field. Use 0FFh for no XON/XOFF processing. 11h is the standard XON.

4. **XOFF**

    If the protocol converter uses XON/XOFF pacing, specify the XOFF character used in this field. Use 0FFh for no XON/XOFF processing. 13h is the standard XOFF.

6.20   MAINCON Panel D7, DEC VT320 (continued)

5. **HW Flow - Hardware Flow Control Option**

   '0'/'1'/'2' - none/CTS-RTS/DSR-DTR. Selects type of hardware flow control, usually used with error correcting modems. Setting CTS/RTS will prevent the driver from sending data unless the modem raises CTS, setting DSR/DTS prevents the driver from sending unless the modem raises DSR. CTS/RTS is most commonly used with error correcting modems.

6. **Flicker**

   Controls how much extra time (in 100ths of a second) will be spent waiting to insure that the protocol converter has stopped sending data.

7. **Keydelay**

   The number of milliseconds delay between sending characters to the protocol converter. This can be used to prevent overruns at the protocol converter.

8. **Comm**

   '1' through '9' and ':', ';', '<', '=', '>' and '?' (ASCII values 031h through 03Fh) representing COMM ports 1 through 15. For DOS, COM1 and COM2 are predefined, and any other values require a MAINCFG.POR. For Windows and OS/2, COM1 through COM9 may be specified.

9. **Baud**

   The required baud rate. 300=300bps, 1200=1200bps, 2400=2400bps, 4800=4800bps, 9600=9600bps, 144=14400bps, 192=19.2kbps, 18=19.2kbps (synonym), 288=28800bps, 38=38400bps, 56=56kbps, 115=115kbps.

   NOTE: Not all drivers and environments support all baud rates.

10. **Parity**

    'E' = Even, 'O' = Odd, 'S' = Space, 'M' = Mark, and 'N' = None.

11. **Data Bits**

    '7' or '8' data bits.

12. **Stop Bits**

    '1' or '2' stop bits.

13. **Half-Duplex**

    Setting this field to '1' will cause the VT220 emulator to operate in half-duplex mode. Half-duplex mode is significantly inferior to full-duplex mode for terminal emulation and data transfer. Full-duplex mode should be used where ever possible.

14. **Rate Limit**

    When '1' is selected, the transmit rate is limited to about 180 cps. When '0' is selected the transmit rate is unlimited.

6.20 <u>MAINCON Panel D7, DEC VT320 (continued)</u>

```
_____        _____        _____
                        |  ACROSS-THE-BOARDS(r)  Config  |
                         _____

                                                      Page  2 of 14

                    ---- Protocol Converter (DEC VT320) ----

Machine Mode (1,2,3,4).................. 1
VT300 ID (1,2,3,4,5).................... 1
User Features (0 = Unlock, 1 = Lock).... 0
Rows & Columns.......................... 1
New Line (CR/CRLF)...................... 0
Margin Bell (On/Off).................... 1
Backspace/Del Key (1/0)................. 1
Warning Bell (On/Off)................... 1
Numeric Keypad (0/1).................... 0
Dec Supplemental/ISO-Latin1............. 0
Cursor Keys (0/1)....................... 0
Cursor Visible (1/0).................... 0
User Defined Keys (Unlock/Lock)........ 0
Status Line (0/1/2)..................... 0

Mode of operation: 1 = VT300 with 7 bit controls, 2= VT300 with 8 bit controls,
3 = VT52, 4 = VT100.

F10: write config to disk   Esc: Exit  PgDn: user def keys  PgUp: prior page
```

15. **Machine Mode**

The VT320 emulator will operate in the selected machine mode. The possible setup values for machine mode are: '1' = VT300 CONTROL 7; '2' = VT300 CONTROL 8; '3' = VT52; '4' = VT100.

16. **VT300 ID**

This parameter is only effective when you select VT300 for the machine mode. The display station returns the selected response for the Device Attribute command. The possible setup values for VT300 ID are: '1' = VT320; '2' = VT100; '3' = VT101; '4' = VT102; '5' = VT220;

17. **User Features**

When '0' (UNLOCK) is selected, a host application program will be able to define TABSTOPs and lock the keyboard. When '1' (LOCK) is selected, an application program cannot define TABSTOPs or lock the keyboard.

18. **Row & Column**

The screen size for the display. The possible setup values for Row & Column are: '1' = 24x80; '2' = 25x80; '3' = 24x132; '4' = 25x132; '5' = 27x132.

19. **New Line**

The character(s) is generated when the Return key is pressed. '0' = CR only; '1' = CR and LF.

6.20   MAINCON Panel D7, DEC VT320 (continued)

20.   Margin Bell

When '1' (ON) is selected, an audible alarm will sound when the cursor reaches the right margin; either column 73 (80- column mode) or column 125 (132-column mode). If you select '0'(Off), and the alarm will not be sounded when the right margin is reached.

21.   Backspace/Del key

When '1' is selected, the Backspace key sends an 0x08 (BS). When '2' is selected, the Backspace key is in Delete mode and an 0x7f (DEL) is sent.

22.   Warning Bell

When '1' (ON) is selected, an audible alarm will sound when an operation error occurs or the display station received control-G code. If you select '0' (Off), and then the alarm will not be sounded when error occurs or control-G received.

23.   Numeric Keypad

When '0' (NORMAL) is selcted, the display station generates the corresponding ASCII character when a numeric keypad key is pressed. If you choose '1', the display station generates the application control function when a numeric keypad key is pressed.

24.   User-Preferred Supplemental Set

When '0' is selected, the DEC Supplemental set is the UPSS. When '1' is selected, the ISO-LATIN1 is the UPSS.

25.   Cursor Keys

When '0' (NORMAL) is selected, the display station generates the corresponding ASCII character when a cursor key is pressed. If you select '1', the display station generates the application control function when a cursor key is pressed.

26.   Cursor Visible

When '1' is selected, the Cursor mode is ON. This only affects the status bits returned in dvcstat. Currently the cursor is always visible. When '0' is selected the the Cursor mode is OFF.

27   User-Defined Key

When '1' (LOCK) is selected, the application program cannot define the function keys. If '0' (UNLOCK) is selected the application will be able to (re-)define the keys. MAINCON allows function key macros to be defined even if LOCK is chosen; however the VT220 driver will ignore macros.

28.   Status Line

When '0' is selected, there is no 320 status line. When '1' is selected, the indicator status line is on

> **NOTE**: This is only for 320 compatibility as we don't really display an indicator line. Info is already available on our OIA line. '0' and '1' do NOT affect the screen dimensions. When '2' is selected, there is another row added to the screen and it is HOST WRITABLE. DVCSTAT is adjusted to return larger screen dimensions.

6.20   MAINCON Panel D7, DEC VT320 (continued)

These panels define what is sent to the host when the host requests the Answerback string or a user defined key is sent. Each entry defines the sequence sent for one user defined key or for the answerback string. For example, the user defined key F6 might be defined to send 'ABCD' by entering A, B, C and D in the first four fields for the F6 entry in the table.

A sequence of up to 32 characters may be entered for each definition. Only one character may be entered in each field.

> **NOTE**: Each field may be coded. *See Section 7.5 MAINCON ASCII Characters.*

```
_____        ┌─────────────────────────────────┐        _____
                          │      ACROSS-THE-BOARDS(r)  Config │
                          └─────────────────────────────────┘
                                                                   Page  3 of 14

                          VT320 ANSWERBACK & USER-DEFINED KEYS
  ---VT320--- ----------------------------------------------------------------
  Answer Back

  F6

  F7

  F8

  F9

  F10

  F11

  F12


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.20   <u>MAINCON Panel D7, DEC VT320 (continued)</u>

```
  _____    ┌─────────────────────────────────┐   _____
                         │     ACROSS-THE-BOARDS(r)  Config │
                         └─────────────────────────────────┘
                                                              Page  4 of 14

                          VT320 ANSWERBACK & USER-DEFINED KEYS
  ---VT320--- ----------------------------------------------------------------
  F13

  F14

  F15

  F16

  F17

  F18

  F19

  F20



  F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.20   MAINCON Panel D7, DEC VT320 (continued)

These panels define what is sent to the host when the VT320 terminal is used for 3270 emulation. Each entry defines the sequence sent for a single 3270 key. For example, the 3270 protocol converter attached by the host may be configured to emulate the 3270 Clear key function when it receives the sequence Esc L. To configure that sequence, enter ESC and L in the first two fields for the CLEAR entry in the table.

A sequence of up to 32 characters may be entered for each key definition. Only one character may be entered in each field.

> **NOTES**:
>
> It is possible to redefine the normal printable character keys as well as the 3270 control and function keys, (for example, the A key could be redefined), but this should almost never be done.
>
> Each field may be coded. *See Section 7.5 MAINCON ASCII Characters*.
>
> BRK may be coded as the first field in a key definition.
>
> The sequences entered should match the configuration of the protocol converter. This information should be available from the mainframe System's Programmer.
>
> For APPX and pcMAINFRAME usage, at least the definitions for RESET, ENTER and CLEAR should be correct.

```
 _____    _____    _____
                       |                            |
                       |   ACROSS-THE-BOARDS(r)  Config  |
                       |_____|
                                                              Page  5 of 14

                            DEC VT320 ASCII KEY VALUE
 ---VT320--- -----------------ASCII VALUES-------------------------------
 ENTER        CR
 PF1          ESC 1
 PF2          ESC 2
 PF3          ESC 3
 PF4          ESC 4
 PF5          ESC 5
 PF6          ESC 6
 PF7          ESC 7
 PF8          ESC 8
 PF9          ESC 9
 PF10         ESC 0
 PF11
 PF12
 PF13
 PF14
 PF15


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.20 <u>MAINCON Panel D7, DEC VT320 (continued)</u>

```
_____     _____     _____
                          |                                   |
                          |     ACROSS-THE-BOARDS(r)  Config   |
                          |_____|

                                                         Page  6 of 14

                              DEC VT320 ASCII KEY VALUE
  ---VT320--- ------------------ASCII VALUES-------------------------------
  PF16
  PF17
  PF18
  PF19
  PF20
  PF21
  PF22
  PF23
  PF24
  PA1         BRK
  PA2
  PA3
  CLEAR       ^Z
  SYSREQ
  TEST
  ATTN


  F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
_____     _____     _____
                          |                                   |
                          |     ACROSS-THE-BOARDS(r)  Config   |
                          |_____|

                                                         Page  7 of 14

                              DEC VT320 ASCII KEY VALUE
  ---VT320--- ------------------ASCII VALUES-------------------------------
  Space       SP
  !           !
  "           "
  #           #
  $           $
  %           %
  &           &
  `           `
  (           (
  )           )
  *           *
  +           +
  ,           ,
  -           -
  .           .
  /           /


  F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.20   <u>MAINCON Panel D7, DEC VT320 (continued)</u>

```
 _____     _____     _____
                     |                                |
                     |   ACROSS-THE-BOARDS(r)  Config  |
                     |_____|

                                                         Page  8 of 14

                              DEC VT320 ASCII KEY VALUE
   ---VT320--- -----------------ASCII VALUES-------------------------------
   0           0
   1           1
   2           2
   3           3
   4           4
   5           5
   6           6
   7           7
   8           8
   9           9
   :           :
   ;           ;
   <           <
   =           =
   >           >
   ?           ?


   F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
 _____         _____     _____
                         |                                |
                         |   ACROSS-THE-BOARDS(r)  Config  |
                         |_____|

                                                             Page  9 of 14

                              DEC VT320 ASCII KEY VALUE
   ---VT320--- -----------------ASCII VALUES-------------------------------
   @           @
   A           A
   B           B
   C           C
   D           D
   E           E
   F           F
   G           G
   H           H
   I           I
   J           J
   K           K
   L           L
   M           M
   N           N
   O           O


   F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```
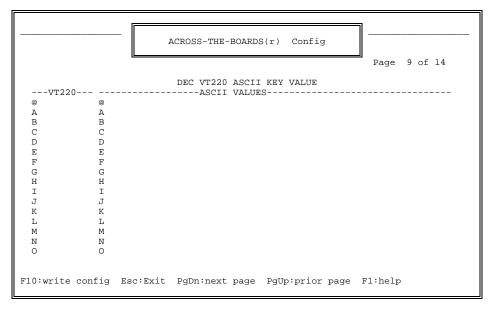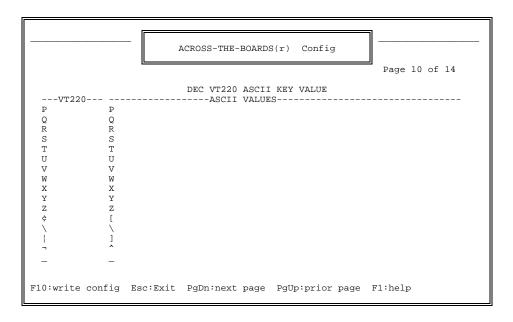
6.20 <u>MAINCON Panel D7, DEC VT320 (continued)</u>

```
 _____        _____        _____
                       |                                  |
                       |   ACROSS-THE-BOARDS(r)  Config   |
                       |_____|

                                                             Page 10 of 14

                           DEC VT320 ASCII KEY VALUE
    ---VT320--- -----------------ASCII VALUES--------------------------------
    P            P
    Q            Q
    R            R
    S            S
    T            T
    U            U
    V            V
    W            W
    X            X
    Y            Y
    Z            Z
    ¢            [
    \            \
    ¦            ]
    ¬            ^
    _            _


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```
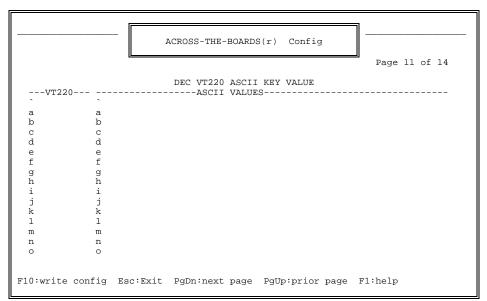
```
 _____        _____        _____
                       |                                  |
                       |   ACROSS-THE-BOARDS(r)  Config   |
                       |_____|

                                                             Page 11 of 14

                           DEC VT320 ASCII KEY VALUE
    ---VT320--- -----------------ASCII VALUES--------------------------------
    `            `
    a            a
    b            b
    c            c
    d            d
    e            e
    f            f
    g            g
    h            h
    i            i
    j            j
    k            k
    l            l
    m            m
    n            n
    o            o


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```
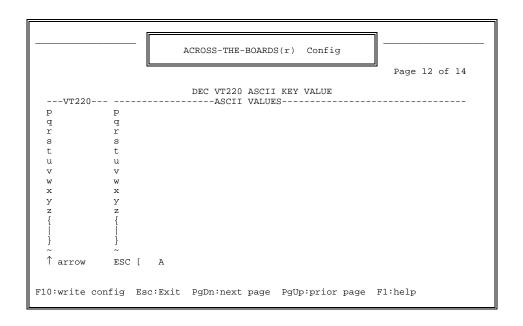
6.20 <u>MAINCON Panel D7, DEC VT320 (continued)</u>

```
_____            ACROSS-THE-BOARDS(r)  Config        _____

                                                            Page 12 of 14

                            DEC VT320 ASCII KEY VALUE
   ---VT320--- -----------------ASCII VALUES-------------------------------
   p           p
   q           q
   r           r
   s           s
   t           t
   u           u
   v           v
   w           w
   x           x
   y           y
   z           z
   {           {
   |           |
   }           }
   ~           ~
   ↑ arrow     ESC [   A


F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
_____            ACROSS-THE-BOARDS(r)  Config        _____

                                                            Page 13 of 14

                            DEC VT320 ASCII KEY VALUE
   ---VT320--- -----------------ASCII VALUES-------------------------------
   ↓ arrow     ESC [   B
   ← arrow     ESC [   D
   → arrow     ESC [   C
   _
   _
   Crsr_Sel
   _
   ERASE EOF   ESC [   K
   _
   _
   DUP
   MARK
   INSERT
   DELETE      7FH
   _
   _

F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.20   <u>MAINCON Panel D7, DEC VT320 (continued)</u>

```
 _____        ACROSS-THE-BOARDS(r)  Config        _____

                                                              Page 14 of 14

                             DEC VT320 ASCII KEY VALUE
   ---VT320--- -----------------ASCII VALUES--------------------------------
   _
   _
   TAB forward  TAB
   TAB backwrd
   HOME         ESC H
   BACKSPACE    BS
   —>> arrow
   <<— arrow
   ↵ new line   LF
   RESET        ^R
   ERASE INPUT
   _
   IDENT
   DVC_CAN
   LIGHT PEN
   _


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.21   MAINCON Panel E1
Single Session TN3270

Configuration filename: MAINCFG.TN3

Used by cf Device Drivers:

#	Name	Description
35	CFXLWPW - non-SF	TN3270 LAN Workplace non-SF
36	CFXLWPW	TN3270 LAN Workplace
37	CFXNFSW - non-SF	TN3270 PC/NFS non-SF
38	CFXNFSW	TN3270 PC/NFS
39	CFXT3NW - non-SF	TN3270 Newt/Chameleon non-SF
40	CFXT3NW	TN3270 Newt/Chameleon
41	CFXT3WS - non-SF	TN3270 Windows Sockets non-SF
42	CFXT3WS	TN3270 Windows Sockets
43	CFXT3FT - non-SF	TN3270 FTP PC/TCP non-SF
44	CFXT3FT	TN3270 FTP PC/TCP
59	CFXT3WS3 - non-SF	TN3270 Win32 Sockets non-SF
60	CFXT3WS3	TN3270 Win32 Sockets
65	CFXT3IO - non-SF	TN3270 IBM TCP/IP/OS2 non-SF
66	CFXT3IO	TN3270 IBM TCP/IP/OS2
67	CFXT3FO - non-SF	TN3270 FTP PC/TCP/OS2 non-SF
68	CFXT3FO	TN3270 FTP/PC/TCP/OS2
69	CFXT3LO - non-SF	TN3270 Novell LWP/OS2 non-SF
70	CFXT3LO	TN3270 Novell LWP/OS2

As of this writing (03/07/95), TN3270 drivers are only available in the OS/2 and Windows environments.

6.21   <u>MAINCON Panel E1, Single Session TN3270 (continued)</u>

```
_____     ┌─────────────────────────────────┐     _____
                      │     ACROSS-THE-BOARDS(r)  Config │
                      └─────────────────────────────────┘

                      -------- Single Session TN3270 ---------

3270 Terminal Model.................... 2
Trace size in K bytes.................. 0
Destination Port Number................ 23
Disconnect Option...................... 0
Minimum Response Time.................. 0
Accept Spurious Writes................. 0
Suppress TN3270E Mode.................. 0
Suppress DOIDs......................... 0
Non-TN3270E SysReq/Attn Mode........... 0




3270 model: 2 (24x80), 3 (32x80), 4 (43x80), or 5 (27x132).  If EAB (extended
attribute support) is desired, follow the model number with an E.

F10: write config to disk   Esc: Exit
```

1. **3270 Terminal Model**

    Terminal Model - indicate 3270 model 2, 3, 4, 5 or enhanced 3270 models 2E, 3E, 4E or 5E. Enhanced models support EABs as well as structured fields.

2. **Trace Size in K bytes**

    Defines the size of the allocated trace buffer in KB. If zero, the trace is disabled. Otherwise, the trace size can be specified up 63K bytes.

3. **Destination Port Number**

    Default port number of Telnet server to connect to. The Well-Known-Port for Telnet (#23) is the default.

4. **Telnet TN3270 Disconnect Option**

    '0' (the default) uses normal TN3270 disconnect processing. '1' forces a Telnet disconnect whenever TN3270 mode is ended.

5. **Minimum Response Time option**

    Forces a minimum amount of delay before sending a response to the host. Used to force a more "human" response time. Specified in hundreths of a second, the default is zero. (0-999).

    Some TN3270 servers do not correctly queue inbound data from the TN3270 terminal when a bracket state change or bracket change direction is pending. Setting a minimum response time allows the TN3270 server to handle the bracket change before receiving the next inbound data from the terminal.

    This is primarily a problem if the host sends a bracket state change or bracket change direction in a separate RU. CICS usually does not, TSO usually does. See also the "Accept Spurious Write" option, below.

6.21   MAINCON Panel E1, Single Session TN3270 (continued)

6.   Accept Spurious Writes

Some TN3270 servers insert spurious write commands into the outbound 3270 datastream while structured fields are being sent and received. This configuration option can be used to compensate for this behavior.

When set to '0', 3270 Write commands will be will be interpreted as standard for 3270 commands.

When set to '1', Write commands will be processed as normal, but will not reset the structured field pending state for the terminal. This will prevent the write command being reported as an erroneous response when a structured field is expected from the host. This only effects data transfer in structured field mode.

When set to '2', Write commands will be processed as for option '1', but a 3270 Write command with only a WCC byte specifying only Keyboard-Restore (free keyboard) and no additional 3270 data, will cancel any remaining "Minimum Response Time" interval.

NOTE: When a spurious null Write/WCC(FKB) sequence is sent it often occurs when the host generates an RU with no 3270 data in it. Often this can be an RU containing a bracket state change or bracket change direction in a separate RU (often done by TSO). When this problem occurs, a Minimum Response Time (recommended setting = 200) and the Accept Spurious Writes (option '1' or '2') options can be set to work around this problem. If the problem is strictly the bracket state change/bracket change direction problem generating the spurious write, setting option '2' will essentially eliminate the performance penalty introduced by setting a minimum response time.

Several version of Microsoft SNA Server have this problem, and Minimum Response Time and Accept Spurious Writes should be set to '200' and '2', if communicating with TSO.

7.   Suppress TN3270E Mode

When set to '1', inhibits the negotiation of TN3270E mode (force "old style" TN3270 to be negotiated with the host). Should normally be set to '0'.

8.   Suppress DOID

When set to '1', inhibits the generation of Destination-Origin-ID structured fields by the driver. This option is for compatibility with old applications that do not support DOIDs. This includes APPX based applications using APPX versions prior to v3.12, or pcMAINFRAME versions prior to v4.30 (both PC and mainframe components must be at the indicated versions). This only applies if applications use structured fields. Should normally be set to '0'.

9.   Support Non-TN3270E SysReq/Attn

When running in non-TN3270E mode: When set to '1', maps the 3270 keyboard function SysReq and Attn to Telnet-Break and Telnet-IP. When set to zero, SysReq generates an AID X'F0', and Attn is not supported.

6.22   MAINCON Panel E2
Telnet VT220

Configuration filename: MAINCFG.TN2

Used by cf Device Drivers:

#	Name	Description
45	CFXT2LW	Telnet VT220 LAN Workplace
46	CFXT2NF	Telnet VT220 PC/NFS
47	CFXT2NW	Telnet VT220 Newt/Chameleon
48	CFXT2WS	Telnet VT220 Windows Sockets
49	CFXT2FT	Telnet VT220 FTP PC/TCP
87	CFXT2IO	Telnet VT220 IBM TCP/IP/OS2
88	CFXT2FO	Telnet VT220 FTP/PC/TCP/OS2
89	CFXT2LO	Telnet VT220 Novell LWP/OS2

```
_____        _____            _____
                   |  ACROSS-THE-BOARDS(r)  Config  |
                   |_____|
                                                          Page  1 of 14
                     --- Protocol Converter (TELNET VT220) ---
Autowrap (0 or 1)....................... 0
Reset needed after BELL? (0=No, 1=Yes).. 0
Flicker check time (in 100ths second)... 0
Half duplex (0 OR 1).................... 0

Trace size in K bytes................... 0
Destination Port Number................. 23
ASCII or Binary (0 or 1)................ 0




0: Data does not wrap to next line when the margin is reached.  1: Data wraps to
the next line when margin is reached.

F10: write config to disk   Esc: Exit  PgDn: next config menu
```

1. **Autowrap**

    When set to '1', this switch causes the cursor to wrap to the beginning of the next line automatically when the last position in a line is written to by the protocol converter.

2. **BEL Reset**

    If the protocol converter locks the keyboard after sending a BELL character, setting this switch to '1' will cause a RESET key sequence to be sent after receiving a BELL. The RESET key is defined in the 3101 KEY TABLE.

3. **Flicker**

    Controls how much extra time (in 100ths of a second) will be spent waiting to insure that the protocol converter has stopped sending data.

6.22   MAINCON Panel E2, Telnet VT220 (continued)

4.   Half-Duplex

Setting this field to '1' will cause the VT220 emulator to operate in half-duplex mode. Half-duplex mode is significantly inferior to full-duplex mode for terminal emulation and data transfer. Full-duplex mode should be used where ever possible.

5.   Trace Size in K bytes

Defines the size of the allocated trace buffer in KB. If zero, the trace is disabled. Otherwise, the trace size can be specified up 1000K bytes (the exact size limit is environment specific, and the trace size will be adjusted down as needed).

6.   Destination Port Number

Port number of Telnet server to connect to. The Well-Known-Port for Telnet (#23) is the default.

7.   ASCII or Binary

Specify (1) if Telnet should negotiate Binary mode with host. Zero (0) is correct in most cases.

6.22 <u>MAINCON Panel E2, Telnet VT220 (continued)</u>

```
 _____        _____        _____
                       |  ACROSS-THE-BOARDS(r)  Config  |
                       |_____|
                                                            Page  2 of 14


                         --- Protocol Converter (TELNET VT220) ---

Machine Mode (1,2,3,4).................. 1
VT200 ID (1,2,3,4)...................... 1
User Features (0 = Unlock, 1 = Lock).... 0
Rows & Columns.......................... 1
New Line (CR/CRLF)...................... 0
Margin Bell (On/Off).................... 1
Warning Bell (On/Off)................... 1
Numeric Keypad (0/1).................... 0
Cursor Keys (0/1)....................... 0
User Defined Keys (Unlock/Lock)......... 0




Mode of operation: 1 = VT200 with 7 bit controls, 2= VT200 with 8 bit controls,
3 = VT52, 4 = VT100.

F10: write config to disk   Esc: Exit  PgDn: user def keys  PgUp: prior page
```

8. **Machine Mode**

    The VT220 emulator will operate in the selected machine mode. The possible setup values for machine mode are: '1' = VT200 CONTROL 7; '2' = VT200 CONTROL 8; '3' = VT52; '4' = VT100.

9. **VT200 ID**

    This parameter is only effective when you select VT200 for the machine mode. The display station returns the selected response for the Device Attribute command. The possible setup values for VT200 ID are: '1' = VT220; '2' = VT100; '3' = VT101; '4' = VT102.

10. **User Features**

    When '0' (UNLOCK) is selected, a host application program will be able to define TABSTOPs and lock the keyboard. When '1' (LOCK) is selected, an application program cannot define TABSTOPs or lock the keyboard.

11. **Row & Column**

    The screen size for the display. The possible setup values for Row & Column are: '1' = 24x80; '2' = 25x80; '3' = 24x132; '4' = 25x132.

12. **New Line**

    The character(s) is generated when the Return key is pressed. '0' = CR only; '1' = CR and LF.

13. **Margin Bell**

    When '1' (ON) is selected, an audible alarm will sound when the cursor reaches the right margin; either column 73 (80-column mode) or column 125 (132-column mode). If you select '0'(Off), and the alarm will not be sounded when the right margin is reached.

6.22 MAINCON Panel E2, Telnet VT220 (continued)

14. Warning Bell

When '1' (ON) is selected, an audible alarm will sound when an operation error occurs or the display station received control-G code. If you select '0' (Off), and then the alarm will not be sounded when error occurs or control-G received.

15. Numeric Keypad

When '0' (NORMAL) is selcted, the display station generates the corresponding ASCII character when a numeric keypad key is pressed. If you choose '1', the display station generates the application control function when a numeric keypad key is pressed.

16. Cursor Keys

When '0' (NORMAL) is selected, the display station generates the corresponding ASCII character when a cursor key is pressed. If you select '1', the display station generates the application control function when a cursor key is pressed.

17. User-Defined Keys

When '1' (LOCK) is selected, the application program cannot define the function keys. If '0' (UNLOCK) is selected the application will be able to (re-)define the keys. MAINCON allows function key macros to be defined even if LOCK is chosen; however the VT220 driver will ignore macros.

6.22   MAINCON Panel E2, Telnet VT220 (continued)

These panels define what is sent to the host when the host requests the Answerback string or a user defined key is sent. Each entry defines the sequence sent for one user defined key or for the answerback string. For example, the user defined key F6 might be defined to send 'ABCD' by entering A, B, C and D in the first four fields for the F6 entry in the table.

A sequence of up to 32 characters may be entered for each definition. Only one character may be entered in each field.

> **NOTE**: Each field may be coded. *See Section 7.5 MAINCON ASCII Characters*.

```
 _____        _____        _____
                    |  ACROSS-THE-BOARDS(r)  Config  |
                    |_____|
                                                          Page  3 of 14

                         TELNET VT220 ANSWERBACK & USER-DEFINED KEYS
  ---VT220--- ----------------------------------------------------------------
  Answer Back

  F6

  F7

  F8

  F9

  F10

  F11

  F12


  F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
 _____        _____        _____
                    |  ACROSS-THE-BOARDS(r)  Config  |
                    |_____|
                                                          Page  4 of 14

                         TELNET VT220 ANSWERBACK & USER-DEFINED KEYS
  ---VT220--- ----------------------------------------------------------------
  F13

  F14

  F15

  F16

  F17

  F18

  F19

  F20


  F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.22   MAINCON Panel E2, Telnet VT220 (continued)

These panels define what is sent to the host when the VT220 terminal is used for 3270 emulation. Each entry defines the sequence sent for a single 3270 key. For example, the 3270 protocol converter attached by the host may be configured to emulate the 3270 Clear key function when it receives the sequence Esc L. To configure that sequence, enter ESC and L in the first two fields for the CLEAR entry in the table.

A sequence of up to 32 characters may be entered for each key definition. Only one character may be entered in each field.

> **NOTES**:
>
> It is possible to redefine the normal printable character keys as well as the 3270 control and function keys, (for example, the A key could be redefined), but this should almost never be done.
>
> Each field may be coded. *See Section 7.5 MAINCON ASCII Characters*.
>
> BRK may be coded as the first field in a key definition.
>
> The sequences entered should match the configuration of the protocol converter. This information should be available from the mainframe System's Programmer.
>
> For APPX and pcMAINFRAME usage, at least the definitions for RESET, ENTER and CLEAR should be correct.

```
 _____      _____      _____
                       |                              |
                       |   ACROSS-THE-BOARDS(r)  Config|
                       |_____|
                                                             Page  5 of 14

                          TELNET VT220 ASCII KEY VALUE
   ---VT220--- ------------------ASCII VALUES--------------------------------
   ENTER        CR
   PF1          ESC 1
   PF2          ESC 2
   PF3          ESC 3
   PF4          ESC 4
   PF5          ESC 5
   PF6          ESC 6
   PF7          ESC 7
   PF8          ESC 8
   PF9          ESC 9
   PF10         ESC 0
   PF11
   PF12
   PF13
   PF14
   PF15


   F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.22   <u>MAINCON Panel E2, Telnet VT220 (continued)</u>

```
 _____    _____     _____
                       |                             |
                       |  ACROSS-THE-BOARDS(r)  Config|
                       |_____|

                                                         Page  6 of 14

                            TELNET VT220 ASCII KEY VALUE
   ---VT220--- -----------------ASCII VALUES--------------------------------
   PF16
   PF17
   PF18
   PF19
   PF20
   PF21
   PF22
   PF23
   PF24
   PA1         BRK
   PA2
   PA3
   CLEAR       ^Z
   SYSREQ
   TEST
   ATTN


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
 _____    _____     _____
                       |                             |
                       |  ACROSS-THE-BOARDS(r)  Config|
                       |_____|

                                                         Page  7 of 14

                            TELNET VT220 ASCII KEY VALUE
   ---VT220--- -----------------ASCII VALUES--------------------------------
   Space       SP
   !           !
   "           "
   #           #
   $           $
   %           %
   &           &
   `           `
   (           (
   )           )
   *           *
   +           +
   ,           ,
   -           -
   .           .
   /           /


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.22 <u>MAINCON Panel E2, Telnet VT220 (continued)</u>

```
 _____    _____    _____
                      |     ACROSS-THE-BOARDS(r)  Config    |
                      |_____|
                                                         Page  8 of 14

                           TELNET VT220 ASCII KEY VALUE
  ---VT220--- -----------------ASCII VALUES-------------------------------
  0          0
  1          1
  2          2
  3          3
  4          4
  5          5
  6          6
  7          7
  8          8
  9          9
  :          :
  ;          ;
  <          <
  =          =
  >          >
  ?          ?


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
 _____    _____    _____
                      |     ACROSS-THE-BOARDS(r)  Config    |
                      |_____|
                                                         Page  9 of 14

                           TELNET VT220 ASCII KEY VALUE
  ---VT220--- -----------------ASCII VALUES-------------------------------
  @          @
  A          A
  B          B
  C          C
  D          D
  E          E
  F          F
  G          G
  H          H
  I          I
  J          J
  K          K
  L          L
  M          M
  N          N
  O          O


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.22   MAINCON Panel E2, Telnet VT220 (continued)

```
 _____        _____        _____
                       |                              |
                       |  ACROSS-THE-BOARDS(r)  Config |
                       |_____|

                                                        Page 10 of 14

                         TELNET VT220 ASCII KEY VALUE
    ---VT220--- -----------------ASCII VALUES--------------------------------
    P           P
    Q           Q
    R           R
    S           S
    T           T
    U           U
    V           V
    W           W
    X           X
    Y           Y
    Z           Z
    ¢           [
    \           \
    ¦           ]
    ¬           ^
    _           _


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
 _____        _____        _____
                       |                              |
                       |  ACROSS-THE-BOARDS(r)  Config |
                       |_____|

                                                        Page 11 of 14

                         TELNET VT220 ASCII KEY VALUE
    ---VT220--- -----------------ASCII VALUES--------------------------------
    `           `
    a           a
    b           b
    c           c
    d           d
    e           e
    f           f
    g           g
    h           h
    i           i
    j           j
    k           k
    l           l
    m           m
    n           n
    o           o


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.22   <u>MAINCON Panel E2, Telnet VT220 (continued)</u>

```
 _____     _____     _____
                       | ACROSS-THE-BOARDS(r)  Config |
                       |_____|

                                                     Page 12 of 14

                          TELNET VT220 ASCII KEY VALUE
   ---VT220--- -----------------ASCII VALUES------------------------------
   p           p
   q           q
   r           r
   s           s
   t           t
   u           u
   v           v
   w           w
   x           x
   y           y
   z           z
   {           {
   |           |
   }           }
   ~           ~
   ↑ arrow     ESC [   A


   F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
 _____     _____     _____
                       | ACROSS-THE-BOARDS(r)  Config |
                       |_____|

                                                     Page 13 of 14

                          TELNET VT220 ASCII KEY VALUE
   ---VT220--- -----------------ASCII VALUES------------------------------
   ↓ arrow     ESC [   B
   ← arrow     ESC [   D
   → arrow     ESC [   C
   _
   _
   Crsr_Sel
   _
   ERASE EOF   ESC [   K
   _
   _
   DUP
   MARK
   INSERT
   DELETE      7FH
   _
   _


   F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.22   MAINCON Panel E2, Telnet VT220 (continued)

```
                          ┌──────────────────────────────┐
────────────────────      │    ACROSS-THE-BOARDS(r)  Config │      ──────────────────────
                          └──────────────────────────────┘

                                                            Page 14 of 14

                          TELNET VT220 ASCII KEY VALUE
  ---VT220--- -----------------ASCII VALUES-------------------------------
  _
  _
  TAB forward  TAB
  TAB backwrd
  HOME         ESC H
  BACKSPACE    BS
  ──>> arrow
  <<── arrow
  ↵ new line   LF
  RESET        ^R
  ERASE INPUT
  _
  IDENT
  DVC_CAN
  LIGHT PEN
  _


  F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.23 MAINCON Panel E3
DECNET VT220

Configuration filename: MAINCFG.DN2

Used by cf Device Drivers:

#	Name	Description
51	CFXDN22	DECNET/Pathworks VT220

As of 10/26/93, these drivers are only available in the Windows environment.

```
_____        _____        _____
                       |      ACROSS-THE-BOARDS(r)  Config   |
                       |                                     |
                       |_____|
                                                           Page  1 of 14
                        --- Protocol Converter (DECNET VT220) ---

Autowrap (0 or 1)....................... 0
Reset needed after BELL? (0=No, 1=Yes).. 0
Flicker check time (in 100ths second)... 0
Half duplex (0 OR 1).................... 0

Trace size in K bytes................... 0
DECNET Connection Type.................. 0




0: Data does not wrap to next line when the margin is reached.  1: Data wraps to
the next line when margin is reached.

F10: write config to disk   Esc: Exit  PgDn: next config menu
```

1. **Autowrap**

   When set to '1', this switch causes the cursor to wrap to the beginning of the next line automatically when the last position in a line is written to by the protocol converter.

2. **BEL Reset**

   If the protocol converter locks the keyboard after sending a BELL character, setting this switch to '1' will cause a RESET key sequence to be sent after receiving a BELL. The RESET key is defined in the 3101 KEY TABLE.

3. **Flicker**

   Controls how much extra time (in 100ths of a second) will be spent waiting to insure that the protocol converter has stopped sending data.

4. **Half-Duplex**

   Setting this field to '1' will cause the VT220 emulator to operate in half-duplex mode. Half-duplex mode is significantly inferior to full-duplex mode for terminal emulation and data transfer. Full-duplex mode should be used where ever possible.

6.23   MAINCON Panel E3, DECNET VT220 (continued)

5.   **Trace Size in K bytes**

Defines the size of the allocated trace buffer in KB. If zero, the trace is disabled. Otherwise, the trace size can be defined up 63K bytes.

6.   **DECNET Connection Type**

Leave zero to use any available (fastest); specify 1 to use LAT; 2 to use CTERM; and 3 to use TELNET/BAPI.

6.23   <u>MAINCON Panel E3, DECNET VT220 (continued)</u>

```
  _____        _____        _____
                           |  ACROSS-THE-BOARDS(r)  Config  |
                           |_____|
                                                                  Page  2 of 14

                        --- Protocol Converter (DECNET VT220) ---

Machine Mode (1,2,3,4)................. 1
VT200 ID (1,2,3,4)..................... 1
User Features (0 = Unlock, 1 = Lock).... 0
Rows & Columns......................... 1
New Line (CR/CRLF)..................... 0
Margin Bell (On/Off)................... 1
Warning Bell (On/Off).................. 1
Numeric Keypad (0/1)................... 0
Cursor Keys (0/1)...................... 0
User Defined Keys (Unlock/Lock)........ 0




Mode of operation: 1 = VT200 with 7 bit controls, 2= VT200 with 8 bit controls,
3 = VT52, 4 = VT100.

F10: write config to disk   Esc: Exit  PgDn: user def keys  PgUp: prior page
```

7. **Machine Mode**

   The VT220 emulator will operate in the selected machine mode. The possible setup values for machine mode are: '1' = VT200 CONTROL 7; '2' = VT200 CONTROL 8; '3' = VT52; '4' = VT100.

8. **VT100 ID**

   This parameter is only effective when you select VT100 for the machine mode. The display station returns the selected response for the Device Attribute command. The possible setup values for VT100 ID are: '1' = VT220; '2' = VT100; '3' = VT101; '4' = VT102.

9. **User Features**

   When '0' (UNLOCK) is selected, a host application program will be able to define TABSTOPs and lock the keyboard. When '1' (LOCK) is selected, an application program cannot define TABSTOPs or lock the keyboard.

10. **Row & Column**

    The screen size for the display. The possible setup values for Row & Column are: '1' = 24x80; '2' = 25x80; '3' = 24x132; '4' = 25x132.

11. **New Line**

    The character(s) is generated when the Return key is pressed. '0' = CR only; '1' = CR and LF.

12. **Margin Bell**

    When '1' (ON) is selected, an audible alarm will sound when the cursor reaches the right margin; either column 73 (80-column mode) or column 125 (132-column mode). If you select '0' (Off), and the alarm will not be sounded when the right margin is reached.

6.23   MAINCON Panel E3, DECNET VT220 (continued)

13. Warning Bell

When '1' (ON) is selected, an audible alarm will sound when an operation error occurs or the display station received control-G code. If you select '0' (Off), and then the alarm will not be sounded when error occurs or control-G received.

14. Numeric Keypad

When '0' (NORMAL) is selcted, the display station generates the corresponding ASCII character when a numeric keypad key is pressed. If you choose '1', the display station generates the application control function when a numeric keypad key is pressed.

15. Cursor Keys

When '0' (NORMAL) is selected, the display station generates the corresponding ASCII character when a cursor key is pressed. If you select '1', the display station generates the application control function when a cursor key is pressed.

16. User-Defined Keys

When '1' (LOCK) is selected, the application program cannot define the function keys. If '0' (UNLOCK) is selected the application will be able to (re-)define the keys. MAINCON allows function key macros to be defined even if LOCK is chosen; however the VT220 driver will ignore macros.

6.23 MAINCON Panel E3, DECNET VT220 (continued)

These panels define what is sent to the host when the host requests the Answerback string or a user defined key is sent. Each entry defines the sequence sent for one user defined key or for the answerback string. For example, the user defined key F6 might be defined to send 'ABCD' by entering A, B, C and D in the first four fields for the F6 entry in the table.

A sequence of up to 32 characters may be entered for each definition. Only one character may be entered in each field.

> **NOTE**: Each field may be coded. *See Section 7.5 MAINCON ASCII Characters*.

```
_____   ┌─────────────────────────────┐   _____
                       │    ACROSS-THE-BOARDS(r)  Config │
                       └─────────────────────────────┘
                                                              Page  3 of 14

                         DECNET VT220 ANSWERBACK & USER-DEFINED KEYS
  ---VT220--- -----------------------------------------------------------------
  Answer Back

  F6

  F7

  F8

  F9

  F10

  F11

  F12


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
_____   ┌─────────────────────────────┐   _____
                       │    ACROSS-THE-BOARDS(r)  Config │
                       └─────────────────────────────┘
                                                              Page  4 of 14

                         DECNET VT220 ANSWERBACK & USER-DEFINED KEYS
  ---VT220--- -----------------------------------------------------------------
  F13

  F14

  F15

  F16

  F17

  F18

  F19

  F20


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.23   MAINCON Panel E3, DECNET VT220 (continued)

These panels define what is sent to the host when the VT220 terminal is used for 3270 emulation. Each entry defines the sequence sent for a single 3270 key. For example, the 3270 protocol converter attached by the host may be configured to emulate the 3270 Clear key function when it receives the sequence Esc L. To configure that sequence, enter ESC and L in the first two fields for the CLEAR entry in the table.

A sequence of up to 32 characters may be entered for each key definition. Only one character may be entered in each field.

NOTES:

It is possible to redefine the normal printable character keys as well as the 3270 control and function keys, (for example, the A key could be redefined), but this should almost never be done.

Each field may be coded. *See Section 7.5 MAINCON ASCII Characters*.

BRK may be coded as the first field in a key definition.

The sequences entered should match the configuration of the protocol converter. This information should be available from the mainframe System's Programmer.

For APPX and pcMAINFRAME usage, at least the definitions for RESET, ENTER and CLEAR should be correct.

```
_____        _____        _____
                        |      ACROSS-THE-BOARDS(r)  Config    |
                        |_____|
                                                                   Page  5 of 14

                              DECNET VT220 ASCII KEY VALUE
    ---VT220--- ------------------ASCII VALUES--------------------------------
    ENTER       CR
    PF1         ESC 1
    PF2         ESC 2
    PF3         ESC 3
    PF4         ESC 4
    PF5         ESC 5
    PF6         ESC 6
    PF7         ESC 7
    PF8         ESC 8
    PF9         ESC 9
    PF10        ESC 0
    PF11
    PF12
    PF13
    PF14
    PF15


    F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.23   <u>MAINCON Panel E3, DECNET VT220 (continued)</u>

```
_____      ACROSS-THE-BOARDS(r)  Config      _____

                                                            Page  6 of 14

                           DECNET VT220 ASCII KEY VALUE
    ---VT220--- ------------------ASCII VALUES-------------------------------
    PF16
    PF17
    PF18
    PF19
    PF20
    PF21
    PF22
    PF23
    PF24
    PA1          BRK
    PA2
    PA3
    CLEAR        ^Z
    SYSREQ
    TEST
    ATTN


    F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
_____      ACROSS-THE-BOARDS(r)  Config      _____

                                                            Page  7 of 14

                           DECNET VT220 ASCII KEY VALUE
    ---VT220--- ------------------ASCII VALUES-------------------------------
    Space        SP
    !            !
    "            "
    #            #
    $            $
    %            %
    &            &
    `            `
    (            (
    )            )
    *            *
    +            +
    ,            ,
    -            -
    .            .
    /            /


    F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.23 MAINCON Panel E3, DECNET VT220 (continued)

```
 _____      _____      _____
|                  |    | ACROSS-THE-BOARDS(r)  Config |    |                  |
 ------------------      ----------------------------      ------------------

                                                            Page  8 of 14

                        DECNET VT220 ASCII KEY VALUE
   ---VT220--- ------------------ASCII VALUES--------------------------------
   0           0
   1           1
   2           2
   3           3
   4           4
   5           5
   6           6
   7           7
   8           8
   9           9
   :           :
   ;           ;
   <           <
   =           =
   >           >
   ?           ?


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
 _____      _____      _____
|                  |    | ACROSS-THE-BOARDS(r)  Config |    |                  |
 ------------------      ----------------------------      ------------------

                                                            Page  9 of 14

                        DECNET VT220 ASCII KEY VALUE
   ---VT220--- ------------------ASCII VALUES--------------------------------
   @           @
   A           A
   B           B
   C           C
   D           D
   E           E
   F           F
   G           G
   H           H
   I           I
   J           J
   K           K
   L           L
   M           M
   N           N
   O           O


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.23 <u>MAINCON Panel E3, DECNET VT220 (continued)</u>

```
 _____        _____        _____
                        |  ACROSS-THE-BOARDS(r)  Config  |
                        |_____|
                                                            Page 10 of 14

                           DECNET VT220 ASCII KEY VALUE
  ---VT220--- ------------------ASCII VALUES-------------------------------
  P           P
  Q           Q
  R           R
  S           S
  T           T
  U           U
  V           V
  W           W
  X           X
  Y           Y
  Z           Z
  ¢           [
  \           \
  ¦           ]
  ¬           ^
  _           _


F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
 _____        _____        _____
                        |  ACROSS-THE-BOARDS(r)  Config  |
                        |_____|
                                                            Page 11 of 14

                           DECNET VT220 ASCII KEY VALUE
  ---VT220--- ------------------ASCII VALUES-------------------------------
  `           `
  a           a
  b           b
  c           c
  d           d
  e           e
  f           f
  g           g
  h           h
  i           i
  j           j
  k           k
  l           l
  m           m
  n           n
  o           o


F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.23   MAINCON Panel E3, DECNET VT220 (continued)

```
 _____       _____       _____
                        |                        |
                        |  ACROSS-THE-BOARDS(r)  Config  |
                        |_____|

                                                           Page 12 of 14

                           DECNET VT220 ASCII KEY VALUE
    ---VT220--- ------------------ASCII VALUES-------------------------------
    p           p
    q           q
    r           r
    s           s
    t           t
    u           u
    v           v
    w           w
    x           x
    y           y
    z           z
    {           {
    |           |
    }           }
    ~           ~
    ↑ arrow     ESC [    A


    F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```
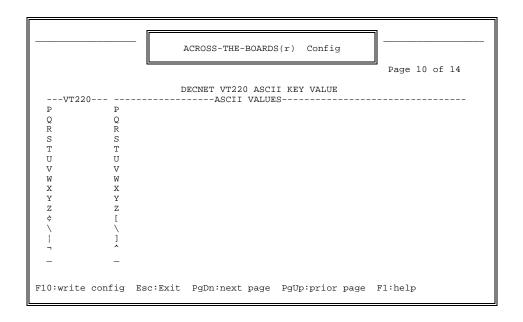
```
 _____       _____       _____
                        |                        |
                        |  ACROSS-THE-BOARDS(r)  Config  |
                        |_____|

                                                           Page 13 of 14

                           DECNET VT220 ASCII KEY VALUE
    ---VT220--- ------------------ASCII VALUES-------------------------------
    ↓ arrow     ESC [    B
    ← arrow     ESC [    D
    → arrow     ESC [    C
    _
    _
    Crsr_Sel
    _
    ERASE EOF   ESC [    K
    _
    _
    DUP
    MARK
    INSERT
    DELETE      7FH
    _
    _


    F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```
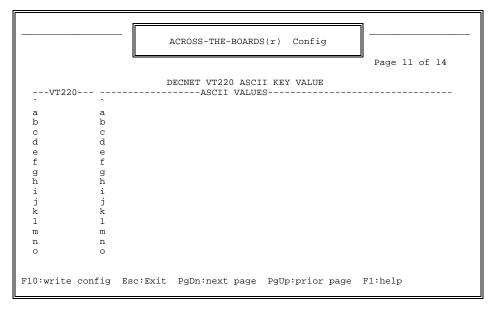
6.23 <u>MAINCON Panel E3, DECNET VT220 (continued)</u>

```
 _____     ┌─────────────────────────────────┐     _____
                      │      ACROSS-THE-BOARDS(r)  Config │
                      └─────────────────────────────────┘
                                                            Page 14 of 14

                           DECNET VT220 ASCII KEY VALUE
  ---VT220--- ------------------ASCII VALUES--------------------------------
   _
   _
  TAB forward  TAB
  TAB backwrd
  HOME         ESC H
  BACKSPACE    BS
  ——>> arrow
  <<—— arrow
  ↵ new line   LF
  RESET        ^R
  ERASE INPUT
   _
  IDENT
  DVC_CAN
  LIGHT PEN
   _


  F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.24   **MAINCON Panel E4**
Telnet VT320

Configuration filename: MAINCFG.TN4

Used by cf Device Drivers:

#	Name	Description
103	CFXT4LW	Telnet VT320 LAN Workplace
104	CFXT4NF	Telnet VT320 PC/NFS
105	CFXT4NW	Telnet VT320 Newt/Chameleon
106	CFXT4WS	Telnet VT320 Windows Sockets
107	CFXT4FT	Telnet VT320 FTP PC/TCP
109	CFXT4IO	Telnet VT320 IBM TCP/IP/OS2
110	CFXT4FO	Telnet VT320 FTP/PC/TCP/OS2
111	CFXT4LO	Telnet VT320 Novell LWP/OS2

```
_____        ACROSS-THE-BOARDS(r)  Config      _____

                                                          Page  1 of 14
                       --- Protocol Converter (TELNET VT320) ---

Autowrap (0 or 1)....................... 0
Reset needed after BELL? (0=No, 1=Yes).. 0
Flicker check time (in 100ths second)... 0
Half duplex (0 OR 1).................... 0

Trace size in K bytes................... 0
Destination Port Number................. 23
ASCII or Binary (0 or 1)................ 0




0: Data does not wrap to next line when the margin is reached.  1: Data wraps to
the next line when margin is reached.

F10: write config to disk   Esc: Exit  PgDn: next config menu
```

1. **Autowrap**

    When set to '1', this switch causes the cursor to wrap to the beginning of the next line automatically when the last position in a line is written to by the protocol converter.

2. **BEL Reset**

    If the protocol converter locks the keyboard after sending a BELL character, setting this switch to '1' will cause a RESET key sequence to be sent after receiving a BELL. The RESET key is defined in the 3101 KEY TABLE.

3. **Flicker**

    Controls how much extra time (in 100ths of a second) will be spent waiting to insure that the protocol converter has stopped sending data.

6.24   MAINCON Panel E4, Telnet VT320 (continued)

4. **Half-Duplex**

   Setting this field to '1' will cause the VT220 emulator to operate in half-duplex mode. Half-duplex mode is significantly inferior to full-duplex mode for terminal emulation and data transfer. Full-duplex mode should be used where ever possible.

5. **Trace Size in K bytes**

   Defines the size of the allocated trace buffer in KB. If zero, the trace is disabled. Otherwise, the trace size can be specified up 1000K bytes (the exact size limit is environment specific, and the trace size will be adjusted down as needed).

6. **Destination Port Number**

   Port number of Telnet server to connect to. The Well-Known-Port for Telnet (#23) is the default.

7. **ASCII or Binary**

   Specify (1) if Telnet should negotiate Binary mode with host. Zero (0) is correct in most cases.

6.24   **MAINCON Panel E4, Telnet VT320 (continued)**

```
 _____    _____    _____
                    |                            |
                    |  ACROSS-THE-BOARDS(r)  Config |
                    |_____|

                                                      Page  2 of 14


                    --- Protocol Converter (TELNET VT320) ---

Machine Mode (1,2,3,4)................. 1
VT300 ID (1,2,3,4,5)................... 1
User Features (0 = Unlock, 1 = Lock).... 0
Rows & Columns......................... 1
New Line (CR/CRLF)..................... 0
Margin Bell (On/Off)................... 1
Backspace/Del Key (1/0)................ 1
Warning Bell (On/Off).................. 1
Numeric Keypad (0/1)................... 0
Dec Supplemental/ISO-Latin1............ 0
Cursor Keys (0/1)...................... 0
Cursor Visible (1/0)................... 0
User Defined Keys (Unlock/Lock)........ 0
Status Line (0/1/2).................... 0

Mode of operation: 1 = VT300 with 7 bit controls, 2= VT300 with 8 bit controls,
3 = VT52, 4 = VT100.

F10: write config to disk   Esc: Exit  PgDn: user def keys  PgUp: prior page
```

8. **Machine Mode**

    The VT320 emulator will operate in the selected machine mode. The possible setup values for machine mode are: '1' = VT300 CONTROL 7; '2' = VT300 CONTROL 8; '3' = VT52; '4' = VT100.

9. **VT300 ID**

    This parameter is only effective when you select VT300 for the machine mode. The display station returns the selected response for the Device Attribute command. The possible setup values for VT300 ID are: '1' = VT320; '2' = VT100; '3' = VT101; '4' = VT102, '5' = VT220.

10. **User Features**

    When '0' (UNLOCK) is selected, a host application program will be able to define TABSTOPs and lock the keyboard. When '1' (LOCK) is selected, an application program cannot define TABSTOPs or lock the keyboard.

11. **Row & Column**

    The screen size for the display. The possible setup values for Row & Column are: '1' = 24x80; '2' = 25x80; '3' = 24x132; '4' = 25x132, '5' = 27x132.

12. **New Line**

    The character(s) is generated when the Return key is pressed. '0' = CR only; '1' = CR and LF.

13. **Margin Bell**

    When '1' (ON) is selected, an audible alarm will sound when the cursor reaches the right margin; either column 73 (80-column mode) or column 125 (132-column mode). If you select '0'(Off), and the alarm will not be sounded when the right margin is reached.

6.24 MAINCON Panel E4, Telnet VT320 (continued)

14. **Backspace/Del key**

    When '1' is selected, the Backspace key sends an 0x08 (BS). When '2' is selected, the Backspace key is in Delete mode and an 0x7f (DEL) is sent.

15. **Warning Bell**

    When '1' (ON) is selected, an audible alarm will sound when an operation error occurs or the display station received control-G code. If you select '0' (Off), and then the alarm will not be sounded when error occurs or control-G received.

16. **Rate Limit**

    When '1' is selected, the transmit rate is limited to about 180 cps. When '0' is selected the transmit rate is unlimited.

17. **Numeric Keypad**

    When '0' (NORMAL) is selcted, the display station generates the corresponding ASCII character when a numeric keypad key is pressed. If you choose '1', the display station generates the application control function when a numeric keypad key is pressed.

18. **User-Preferred Supplemental Set**

    When '0' is selected, the DEC Supplemental set is the UPSS. When '1' is selected, the ISO-LATIN1 is the UPSS.

19. **Cursor Keys**

    When '0' (NORMAL) is selected, the display station generates the corresponding ASCII character when a cursor key is pressed. If you select '1', the display station generates the application control function when a cursor key is pressed.

20. **Cursor Visible**

    When '1' is selected, the Cursor mode is ON. This only affects the status bits returned in dvcstat. Currently the cursor is always visible. When '0' is selected the the Cursor mode is OFF.

21. **User-Defined Keys**

    When '1' (LOCK) is selected, the application program cannot define the function keys. If '0' (UNLOCK) is selected the application will be able to (re-)define the keys. MAINCON allows function key macros to be defined even if LOCK is chosen; however the VT220 driver will ignore macros.

22. **Status Line**

    When '0' is selected, there is no 320 status line. When '1' is selected, the indicator status line is on.

    > **NOTE**: this is only for 320 compatibility as we don't really display an indicator line. Info is already available on our OIA line.

    '0' and '1' do **not** affect the screen dimensions. When '2' is selected, there is another row added to the screen and it is HOST WRITABLE. DVCSTAT is adjusted to return larger screen dimensions.

6.24   MAINCON Panel E4, Telnet VT320 (continued)

These panels define what is sent to the host when the host requests the Answerback string or a user defined key is sent. Each entry defines the sequence sent for one user defined key or for the answerback string. For example, the user defined key F6 might be defined to send 'ABCD' by entering A, B, C and D in the first four fields for the F6 entry in the table.

A sequence of up to 32 characters may be entered for each definition. Only one character may be entered in each field.

   NOTE: Each field may be coded. *See Section 7.5 MAINCON ASCII Characters*.

```
 _____          _____          _____
                           |                             |
                           |  ACROSS-THE-BOARDS(r)  Config |
                           |_____|

                                                         Page   3 of 14

                        TELNET VT320 ANSWERBACK & USER-DEFINED KEYS
   ---VT320--- ----------------------------------------------------------------
   Answer Back

   F6

   F7

   F8

   F9

   F10

   F11

   F12


 F10:write config  Esc:Exit   PgDn:next page   PgUp:prior page   F1:help
```

```
 _____          _____          _____
                           |                             |
                           |  ACROSS-THE-BOARDS(r)  Config |
                           |_____|

                                                         Page   4 of 14

                        TELNET VT320 ANSWERBACK & USER-DEFINED KEYS
   ---VT320--- ----------------------------------------------------------------
   F13

   F14

   F15

   F16

   F17

   F18

   F19

   F20


 F10:write config  Esc:Exit   PgDn:next page   PgUp:prior page   F1:help
```

6.24   <u>MAINCON Panel E4, Telnet VT320 (continued)</u>

These panels define what is sent to the host when the VT320 terminal is used for 3270 emulation. Each entry defines the sequence sent for a single 3270 key. For example, the 3270 protocol converter attached by the host may be configured to emulate the 3270 Clear key function when it receives the sequence Esc L. To configure that sequence, enter ESC and L in the first two fields for the CLEAR entry in the table.

A sequence of up to 32 characters may be entered for each key definition. Only one character may be entered in each field.

NOTES:

It is possible to redefine the normal printable character keys as well as the 3270 control and function keys, (for example, the A key could be redefined), but this should almost never be done.

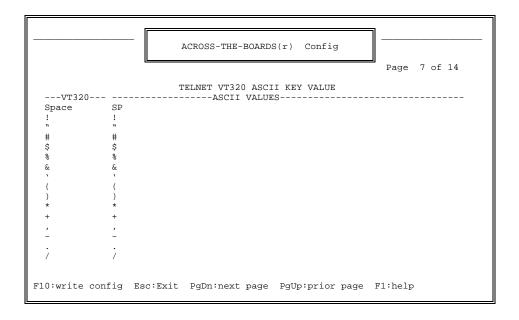Each field may be coded. *See Section 7.5 MAINCON ASCII Characters*.

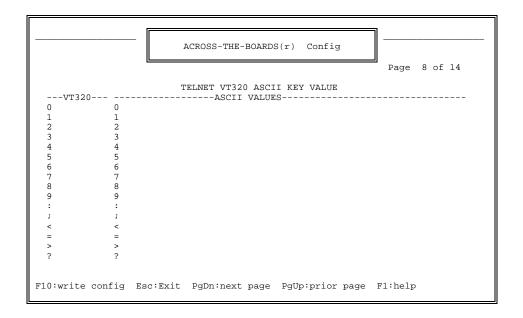BRK may be coded as the first field in a key definition.

The sequences entered should match the configuration of the protocol converter. This information should be available from the mainframe System's Programmer.
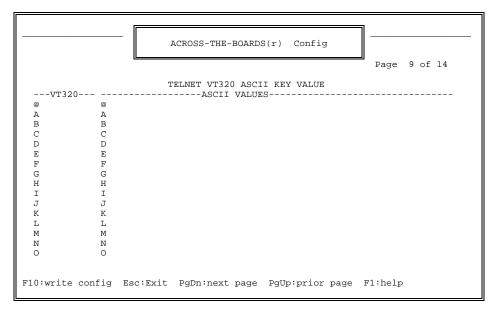
For APPX and pcMAINFRAME usage, at least the definitions for RESET, ENTER and CLEAR should be correct.
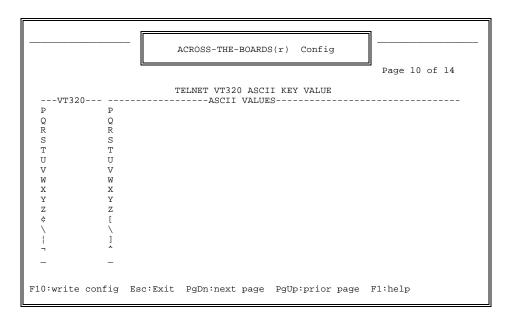
```
 _____        _____       _____
                         |                                   |
                         |    ACROSS-THE-BOARDS(r)  Config    |
                         |_____|
                                                                       Page  5 of 14

                              TELNET VT320 ASCII KEY VALUE
  ---VT320--- ------------------ASCII VALUES--------------------------------
  ENTER         CR
  PF1           ESC 1
  PF2           ESC 2
  PF3           ESC 3
  PF4           ESC 4
  PF5           ESC 5
  PF6           ESC 6
  PF7           ESC 7
  PF8           ESC 8
  PF9           ESC 9
  PF10          ESC 0
  PF11
  PF12
  PF13
  PF14
  PF15


  F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.24 <u>MAINCON Panel E4, Telnet VT320 (continued)</u>

```
 _____        _____        _____
                    |  ACROSS-THE-BOARDS(r)  Config  |
                    |_____|

                                                         Page  6 of 14

                          TELNET VT320 ASCII KEY VALUE
    ---VT320--- ------------------ASCII VALUES--------------------------------
    PF16
    PF17
    PF18
    PF19
    PF20
    PF21
    PF22
    PF23
    PF24
    PA1         BRK
    PA2
    PA3
    CLEAR       ^Z
    SYSREQ
    TEST
    ATTN


    F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
 _____        _____        _____
                    |  ACROSS-THE-BOARDS(r)  Config  |
                    |_____|

                                                         Page  7 of 14

                          TELNET VT320 ASCII KEY VALUE
    ---VT320--- ------------------ASCII VALUES--------------------------------
    Space       SP
    !           !
    "           "
    #           #
    $           $
    %           %
    &           &
    `           `
    (           (
    )           )
    *           *
    +           +
    ,           ,
    -           -
    .           .
    /           /


    F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```
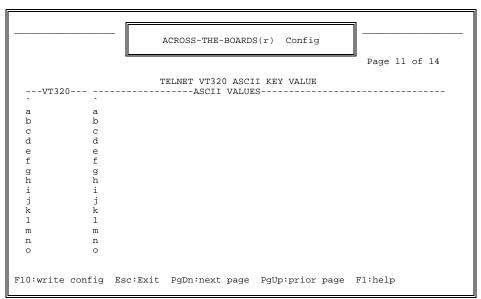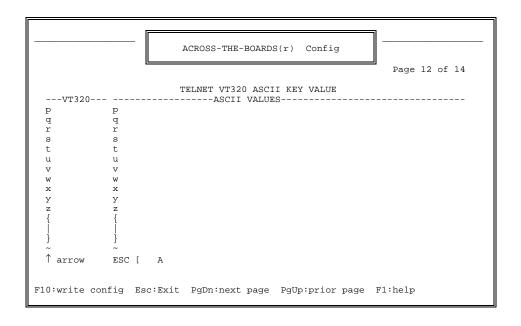
6.24   <u>MAINCON Panel E4, Telnet VT320 (continued)</u>

```
_____  ┌─────────────────────────────────┐  _____
                     │       ACROSS-THE-BOARDS(r)  Config│
                     └─────────────────────────────────┘
                                                            Page  8 of 14

                            TELNET VT320 ASCII KEY VALUE
     ---VT320--- ------------------ASCII VALUES-------------------------------
     0           0
     1           1
     2           2
     3           3
     4           4
     5           5
     6           6
     7           7
     8           8
     9           9
     :           :
     ;           ;
     <           <
     =           =
     >           >
     ?           ?


    F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
_____  ┌─────────────────────────────────┐  _____
                     │       ACROSS-THE-BOARDS(r)  Config│
                     └─────────────────────────────────┘
                                                            Page  9 of 14

                            TELNET VT320 ASCII KEY VALUE
     ---VT320--- ------------------ASCII VALUES-------------------------------
     @           @
     A           A
     B           B
     C           C
     D           D
     E           E
     F           F
     G           G
     H           H
     I           I
     J           J
     K           K
     L           L
     M           M
     N           N
     O           O


    F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.24   <u>MAINCON Panel E4, Telnet VT320 (continued)</u>

```
 _____   ┌─────────────────────────────────┐  _____
                      │       ACROSS-THE-BOARDS(r)  Config │
                      └─────────────────────────────────┘
                                                            Page 10 of 14

                              TELNET VT320 ASCII KEY VALUE
   ---VT320--- ------------------ASCII VALUES--------------------------------
   P           P
   Q           Q
   R           R
   S           S
   T           T
   U           U
   V           V
   W           W
   X           X
   Y           Y
   Z           Z
   ¢           [
   \           \
   ¦           ]
   ¬           ^
   _           _


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
 _____   ┌─────────────────────────────────┐  _____
                      │       ACROSS-THE-BOARDS(r)  Config │
                      └─────────────────────────────────┘
                                                            Page 11 of 14

                              TELNET VT320 ASCII KEY VALUE
   ---VT320--- ------------------ASCII VALUES--------------------------------
   `           `
   a           a
   b           b
   c           c
   d           d
   e           e
   f           f
   g           g
   h           h
   i           i
   j           j
   k           k
   l           l
   m           m
   n           n
   o           o


 F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.24 <u>MAINCON Panel E4, Telnet VT320 (continued)</u>

```
_____  ┌──────────────────────────────┐  _____
                        │   ACROSS-THE-BOARDS(r)  Config │
                        └──────────────────────────────┘
                                                             Page 12 of 14

                         TELNET VT320 ASCII KEY VALUE
   ---VT320--- ------------------ASCII VALUES--------------------------------
   p           p
   q           q
   r           r
   s           s
   t           t
   u           u
   v           v
   w           w
   x           x
   y           y
   z           z
   {           {
   |           |
   }           }
   ~           ~
   ↑ arrow      ESC [   A


F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

```
_____  ┌──────────────────────────────┐  _____
                        │   ACROSS-THE-BOARDS(r)  Config │
                        └──────────────────────────────┘
                                                             Page 13 of 14

                         TELNET VT320 ASCII KEY VALUE
   ---VT320--- ------------------ASCII VALUES--------------------------------
   ↓ arrow      ESC [   B
   ← arrow      ESC [   D
   → arrow      ESC [   C
   _
   _
   Crsr_Sel
   _
   ERASE EOF    ESC [   K
   _
   _
   DUP
   MARK
   INSERT
   DELETE       7FH
   _
   _


F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.24   **<u>MAINCON Panel E4, Telnet VT320 (continued)</u>**

```
_____         ACROSS-THE-BOARDS(r)  Config         _____


                                                         Page 14 of 14

                          TELNET VT320 ASCII KEY VALUE
    ---VT320--- -----------------ASCII VALUES-------------------------------
    _
    _
    TAB forward  TAB
    TAB backwrd
    HOME         ESC H
    BACKSPACE    BS
    ——>> arrow
    <<—— arrow
    ↵ new line   LF
    RESET        ^R
    ERASE INPUT
    _
    IDENT
    DVC_CAN
    LIGHT PEN
    _


    F10:write config  Esc:Exit  PgDn:next page  PgUp:prior page  F1:help
```

6.25 MAINCON Panel E5
APPX/TCP

Configuration filename: MAINCFG.ATC

Used by cf Device Driver:

#	Name	Description
114	CFXATLW	APPX/TCP LAN Workplace
115	CFXATNF	APPX/TCP PC/NFS
116	CFXATNW	APPX/TCP Newt/Chameleon
117	CFXATWS	APPX/TCP Windows Sockets
118	CFXATFT	APPX/TCP FTP PC/TCP
119	CFXATIO	APPX/TCP IBM TCP/IP/OS2
120	CFXATFO	APPX/TCP FTP/PC/TCP/OS2
121	CFXATLO	APPX/TCP Novell LWP/OS2
122	CFXATWS3	APPX/TCP Win32 Sockets

```
 _____      _____      _____
                      |      ACROSS-THE-BOARDS(r)  Config    |
                      |_____|


                       -------------- APPX/TCP ----------------

  Trace size in K bytes......... 0000
  Connect timeout (seconds)..... 0000
  Default configuration key..... CONFIG #1


  Configuration Records:
      Key                     Description
      ---                     ---------------------------------------
      CONFIG #1               Sample Configuration #1
      ALT 2                   Alternate Configuration




Enter a non-zero value (4-1000) to enable a diagnostic trace of the APPX/TCP
session.
PgDn: Next Page  PgUp: Prior Page  F10: Write config to disk  Esc: Exit
```

1. **Trace Size in K bytes**

   Defines the size of the allocated trace buffer in KB. If zero, the trace is disabled. Otherwise, the trace size can be specified up 63K bytes.

6.25   MAINCON Panel E5, APPX/TCP (continued)

2.   Connect Timeout

Defines the time that the driver will wait for the host application to respond to the connect request.

The APPX/TCP configuration panels allow for the definition of up to eight configurations for connecting to the host. Each configuration has a "Key" which is used by the application to select which configuration record to use. Also, one of the configurations is marked as the "default", which is used in case the application does not explicitly specify a key.

At least one configuration record must be added, and one of the configuration records must be marked as a default.

To add a new configuration record, tab to the configuration record list and press F2 -- the configuration panel will be displayed. Enter a key and any other required data, then press F10.

To delete a configuration record, tab to that configuration record and press F3.

To modify a configuration record, tab to that configuration record and press F4 -- the configuration panel will be displayed. Modify the record as needed, then press F10.

To set the default configuration record, tab to that configuration record and press F5. The key of the current default configuration record is display in the upper part of the panel.

6.25 <u>MAINCON Panel E5, APPX/TCP (continued)</u>

```
_____    ┌─────────────────────────────────┐    _____
                        │        ACROSS-THE-BOARDS(r)  Config        │
                        └─────────────────────────────────┘

                        ------------- APPX/TCP -----------------
 Key......... CONFIG #1
 Description. Sample Configuration #1


 Host Name... cf370.cfsoft.com
 Port Number. 02500
 PGM.........
 Connect Opt. 2
 Connect data




Enter 1-16 character key to be used for this configuration record.


F10: Write config file to disk    Esc: Exit to prior menu
```

1. **Host Name**

   The name of the host to connect to. Either an IP address (192.1.2.3) or a DNS name (cf370.cfsoft.com) may be entered.

2. **Port Number**

   The port number on which the host is listening for incoming APPX/TCP connections.

3. **Host Program**

   The host program the will be executed (not used by APPX or *pcMAINFRAME*).

4. **Connect Option**

   '1' - Only the basic TCP/IP connect process is performed.

   '2' - A CICS Listener compatible connect process is performed.

   > **NOTE**: For APPX and *pcMAINFRAME*, '2' is usually required.

   '3' - Format-3 Connect

5. **Connect Data**

   For a CICS Listener style connect, this field will be transmitted as the optional "Client-In-Data" field, for Format-3 connects, this provides for "override" parameters.

6.26   MAINCON Panel E6
APPX/TCP - cfPPP

Configuration filename: MAINCFG.ATP

Used by cf Device Driver:

#	Name	Description
131	CFXATPP	APPX/TCP cfPPP Driver
132	CFXATPPD	APPX/TCP cfPPP Driver (DOSX)
136	CFXATPP3	NT-ATCP-PPP APPX/TCP cfPPP Driver (Win32)

```
_____        _____        _____
                       |   ACROSS-THE-BOARDS(r)  Config   |
                       |_____|

                        ----------APPX/TCP - cfPPP-------------
  Trace size in K bytes......... 0000
  Connect timeout (seconds)..... 0000
  Default configuration key..... CONFIG #1


  Configuration Records:
      Key                      Description
      ---                      ---------------------------------------
      CONFIG #1                Sample Configuration #1
      ALT 2                    Alternate Configuration




Enter a non-zero value (4-1000) to enable a diagnostic trace of the APPX/TCP
session.
PgDn: Next Page  PgUp: Prior Page  F10: Write config to disk  Esc: Exit
```

1. **Trace Size in K bytes**

    Defines the size of the allocated trace buffer in KB. If zero, the trace is disabled. Otherwise, the trace size can be specified up 63K bytes.

2. **Connect Timeout**

    Defines the time that the driver will wait for the host application to respond to the connect request.

The APPX/TCP - cfPPP configuration panels allow for the definition of up to eight configurations for connecting to the host. Each configuration has a "Key" which is used by the application to select which configuration record to use. Also, one of the configurations is marked as the "default", which is used in case the application does not explicitly specify a key.

At least one configuration record must be added, and one of the configuration records must be marked as a default.

6.26   MAINCON Panel E6, APPX/TCP - cfPPP (continued)

To add a new configuration record, tab to the configuration record list and press F2 -- the configuration panel will be displayed. Enter a key and any other required data, then press F10.

To delete a configuration record, tab to that configuration record and press F3.

To modify a configuration record, tab to that configuration record and press F4 -- the configuration panel will be displayed. Modify the record as needed, then press F10.

To set the default configuration record, tab to that configuration record and press F5. The key of the current default configuration record is display in the upper part of the panel.

6.26 <u>MAINCON Panel E6, APPX/TCP - cfPPP (continued)</u>

```
_____        ┌───────────────────────────────────┐   _____
                         │        ACROSS-THE-BOARDS(r)  Config │
                         └───────────────────────────────────┘

                    -----------APPX/TCP - cfPPP-------------
   Key......... CONFIG #1
   Description. Sample Configuration #1


   Host Name... cf370.cfsoft.com
   Port Number. 02500
   PGM.........
   Connect Opt. 2
   Connect data




Enter 1-16 character key to be used for this configuration record.


F10: Write config file to disk   Esc: Exit to prior menu
```

1. **Host Name**

    The name of the host to connect to. Either an IP address (192.1.2.3) or a DNS name (cf370.cfsoft.com)
    may be entered.

2. **Port Number**

    The port number on which the host is listening for incoming APPX/TCP connections.

3. **Host Program**

    The host program the will be executed (not used by APPX or *pcMAINFRAME*).

4. **Connect Option**

    '1' - Only the basic TCP/IP connect process is performed.

    '2' - A CICS Listener compatible connect process is performed.

       NOTE: For APPX and *pcMAINFRAME*, '2' is usually required.

    '3' - Format-3 Connect

5. **Connect Data**

    For a CICS Listener style connect, this field will be transmitted as the optional "Client-In-Data" field, for
    Format-3 connects, this provides for "override" parameters.

6.27   MAINCON Panel E7
TN3270 with TN3287F Support

Configuration filename: MAINCFG.TN7

Used by cf Device Driver:

#	Name	Description
139	CFXT7WS3	TN3270 w/TN3287 Win32Sockets non-SF
140	CFXT7WS3	TN3270 w/TN3287 Win32Sockets

```
 _____      _____      _____
                      |                        |
                      |  ACROSS-THE-BOARDS(r)  Config
                      |_____|
                                                          Page  1 of 2

                     ------ TN3270 with TN3287 Support ------

3270 Terminal Model..................... 2
Trace size in K bytes................... 0
Destination Port Number................. 23
Disconnect Option....................... 0
Minimum Response Time................... 0
Accept Spurious Writes.................. 0
Suppress TN3270E Mode................... 0
Suppress DOIDs.......................... 0
Non-TN3270E SysReq/Attn Mode............ 0




3270 model: 2 (24x80), 3 (32x80), 4 (43x80), or 5 (27x132).  If EAB (extended
attribute support) is desired, follow the model number with an E.

F10: write config to disk   Esc: Exit   PgDn: next config menu
```

1. **3270 Terminal Model**

    Terminal Model - indicate 3270 model 2, 3, 4, 5 or enhanced 3270 models 2E, 3E, 4E or 5E. Enhanced models support EABs as well as structured fields.

2. **Trace Size in K bytes**

    Defines the size of the allocated trace buffer in KB. If zero, the trace is disabled. Otherwise, the trace size can be specified up 63K bytes.

3. **Destination Port Number**

    Default port number of Telnet server to connect to. The Well-Known-Port for Telnet (#23) is the default.

4. **Telnet TN3270 Disconnect Option**

    '0' (the default) uses normal TN3270 disconnect processing. '1' forces a Telnet disconnect whenever TN3270 mode is ended.

6.27   MAINCON Panel E7, TN3270 with TN3287 Support (continued)

5. Minimum Response Time option

Forces a minimum amount of delay before sending a response to the host. Used to force a more "human" response time. Specified in hundreths of a second, the default is zero. (0-999).

Some TN3270 servers do not correctly queue inbound data from the TN3270 terminal when a bracket state change or bracket change direction is pending. Setting a minimum response time allows the TN3270 server to handle the bracket change before receiving the next inbound data from the terminal.

This is primarily a problem if the host sends a bracket state change or bracket change direction in a separate RU. CICS usually does not, TSO usually does. See also the "Accept Spurious Write" option, below.

6. Accept Spurious Writes

Some TN3270 servers insert spurious write commands into the outbound 3270 datastream while structured fields are being sent and received. This configuration option can be used to compensate for this behavior.

When set to '0', 3270 Write commands will be will be interpreted as standard for 3270 commands.

When set to '1', Write commands will be processed as normal, but will not reset the structured field pending state for the terminal. This will prevent the write command being reported as an erroneous response when a structured field is expected from the host. This only effects data transfer in structured field mode.

When set to '2', Write commands will be processed as for option '1', but a 3270 Write command with only a WCC byte specifying only Keyboard-Restore (free keyboard) and no additional 3270 data, will cancel any remaining "Minimum Response Time" interval.

NOTE: When a spurious null Write/WCC(FKB) sequence is sent it often occurs when the host generates an RU with no 3270 data in it. Often this can be an RU containing a bracket state change or bracket change direction in a separate RU (often done by TSO). When this problem occurs, a Minimum Response Time (recommended setting = 200) and the Accept Spurious Writes (option '1' or '2') options can be set to work around this problem. If the problem is strictly the bracket state change/bracket change direction problem generating the spurious write, setting option '2' will essentially eliminate the performance penalty introduced by setting a minimum response time.

Several version of Microsoft SNA Server have this problem, and Minimum Response Time and Accept Spurious Writes should be set to '200' and '2', if communicating with TSO.

7. Suppress TN3270E Mode

When set to '1', inhibits the negotiation of TN3270E mode (force "old style" TN3270 to be negotiated with the host). Should normally be set to '0'.

8. Suppress DOID

When set to '1', inhibits the generation of Destination-Origin-ID structured fields by the driver. This option is for compatibility with old applications that do not support DOIDs. This includes APPX based applications using APPX versions prior to v3.12, or pcMAINFRAME versions prior to v4.30 (both PC and mainframe components must be at the indicated versions). This only applies if applications use structured fields. Should normally be set to '0'.

9. Support Non-TN3270E SysReq/Attn

When running in non-TN3270E mode: When set to '1', maps the 3270 keyboard function SysReq and Attn to Telnet-Break and Telnet-IP. When set to zero, SysReq generates an AID X'F0', and Attn is not supported.

6.27 <u>MAINCON Panel E7, TN3270 with TN3287 Support (continued)</u>

```
┌─────────────────────────────────────────────────────────────────────────┐
│                        ┌──────────────────────────────┐                   │
│  _____      │     ACROSS-THE-BOARDS(r)  Config  │  _____ │
│                        └──────────────────────────────┘                   │
│                                                       Page  2 of 2         │
│                                                                           │
│                      ------ TN3270 with TN3287 Support ------             │
│  Print routing (in hex)................. 00                               │
│  Delay Printer Connect.................. 0                                │
│  Autodrop Base Session with Printer...... 0                               │
│  Allow "CONNECT" for Printer Session..... 0                               │
│  Search for Missing FMH-1............... 0                                │
│  Suppress Enhanced Printing............. 0                                │
│  Require Host Connect for Local Copy..... 0                               │
│  Disable Host-Initiated Local Copy....... 0                               │
│  Disable Operator-Initiated Local Copy... 0                               │
│  Print Null Lines During Local Copy...... 0                               │
│                                                                           │
│                                                                           │
│                                                                           │
│  00 = no print routing, 01 thru 04 = LPT1 thru LPT4, 11 thru 14 = COM1 thru COM4. │
│  20 routes print to disk file $$.PRN.                                     │
│                                                                           │
│  F10: write config to disk   Esc: Exit  PgUp: prior page                  │
└─────────────────────────────────────────────────────────────────────────┘
```

10. **Print Routing**

    Default printer destination for output.

    > 00h = Print Data is discarded (default)
    >
    > 01h = Print Data sent to LPT1
    >
    > 02h = Print Data sent to LPT2
    >
    > 03h = Print Data sent to LPT3
    >
    > 04h = Print Data sent to LPT4
    >
    > 11h = Print Data sent to COM1
    >
    > 12h = Print Data sent to COM2
    >
    > 13h = Print Data sent to COM3
    >
    > 14h = Print Data sent to COM4
    >
    > 20h = Print Data written to file $$.PRN

    NOTE: Not used in ATB/Win32.

11. **Delay Printer Connect**

    When set to '0', the printer session will be initiated as soon as the base terminal session is negotiated with the host. When set to '1', the printer session will not be started automatically, and an DskTN3287_Enter key must be sent to start it.

6.27   MAINCON Panel E7, TN3270 with TN3287 Support (continued)

12. Drop Session with Printer

When set to '0', a failure of the printer session will not cause any state change for the base terminal session. When set to '1' a print session failure will cause the base terminal session to drop.

13. Allow "CONNECT"

When set to '0', the only host printer session that can be accessed is the one associated with the base terminal by the TN3270 server. When set to '1', the extended LU name syntax is allowed, and a specific printer LU name can be connected to (internally, this causes a TN3270 CONNECT instead of an ASSOCIATE to be used).

14. Search for Missing FMH-1

For SCS (LU-1) sessions, non-SCS data (such as structured fields) must be sent prefixed by an FMH-1 indicating the data type. Some TN3270 servers do not do this correctly, and when this option is set to '1', the driver will attempt to detect certain structured fields (specifically Read-Partition-Queries) despite the missing FMH-1. When set to '0' the driver will not detect structured fields unless the proper FMH-1 is present.

15. Suppress Enhanced Printing

By default, both colors and fonts (as available for the selected printer) will be used by the driver to produce an accurate rendition of the host printer data stream. In some cases it may be desirable to print with a single font and/or in only black and white. Set as follows:

        0 - Normal
        1 - No color
        2 - No highlighting (fonts)
        3 - Neither color nor highlighting (fonts)

16. Require Host Connect for Local Copy

When set to '0', a local copy operation (either host or operator initiated) can be initiated even if the host printer session is not up. When set to '1', local copies can only be performed if the host printer session is running.

17. Disable Host Initiated Local Copy

When set to '0', host initiated local copies are processed. When set to '1', host initiated local copies are rejected. When set to '2', host initiated local copies are processed, but only for SNA style requests (in some non-SNA environments, the start print bit is set spuriously, resulting in unexpected local copies).

18. Disable Operator Initiated Local Copy

When set to '0', operator initiated local copies are processed. When set to '1', operator initiated local copies are rejected.

19. Print Null Lines During Local Copy

When set to '0', the normal null line suppression logic will be used. When set to '1', null lines will be printed as blank lines.

6.28 MAINCON Panel E8 Single Session TN5250

Configuration filename: MAINCFG.TN5

Used by cf Device Driver:

#	Name	Description
141	CFXT5WS3	TN5250 Win32Sockets

As of this writing (04/19/99), TN5250 drivers are only available in the Win32 environments.

```
_____        _____        _____
                          |         ACROSS-THE-BOARDS(r)  Config      |
                          |_____|

                         -------- Single Session TN5250 ---------

5250 Terminal Model..................... 0
Trace size in K bytes................... 0
Destination Port Number................. 23
Disconnect Option....................... 0
Minimum Response Time................... 0
Keyboard Type (3/5)..................... 3
Screen Attribute Type (3/5/A)........... 3
SysReq Option........................... 0
Message Line Option..................... 0




0=default(IBM-3179-2), 1=IBM-3179-2, 2=IBM-3180-2, 3=IBM-3196-A1, 4=IBM-3477-FC
5=IBM-3477-FG, 6=IBM-5291-1, 7=IBM-5251-11, 8=IBM-5292-2

F10: write config to disk   Esc: Exit
```

1. **5250 Terminal Model**

    Terminal Model - selects negotiated 5250 model. Set as follows:

    > 0 - default (IBM-3179-2)
    > 1 - IBM-3179-2
    > 2 - IBM-3180-2
    > 3 - IBM-3196-A1
    > 4 - IBM-3477-FC
    > 5 - IBM-3477-FG
    > 6 - IBM-5291-1
    > 7 - IBM-5251-11
    > 8 - IBM-5292-2
    > (undefined values default to IBM-3179-2)

2. **Trace Size in K bytes**

    Defines the size of the allocated trace buffer in KB. If zero, the trace is disabled. Otherwise, the trace size can be specified up 63K bytes.

6.28   MAINCON Panel E8, Single Session TN5250 (continued)

3.   Destination Port Number

Default port number of Telnet server to connect to. The Well-Known-Port for Telnet (#23) is the default.

4.   Telnet TN5250 Disconnect Option

'0' (the default) uses normal TN5250 disconnect processing. '1' forces a Telnet disconnect whenever TN5250 mode is ended.

5.   Minimum Response Time Option

Forces a minimum amount of delay before sending a response to the host. Used to force a more "human" response time. Specified in hundreths of a second, the default is zero. (0-999).

Some TN5250 servers do not correctly queue inbound data from the TN5250 terminal when a bracket state change or bracket change direction is pending. Setting a minimum response time allows the TN5250 server to handle the bracket change before receiving the next inbound data from the terminal.

This is primarily a problem if the host sends a bracket state change or bracket change direction in a separate RU.

6.   Keyboard Type

'3' or '5'. If specified as '5', the following 5250 keys will be enabled: CMD, ROLL-UP, ROLL-DOWN, FIELD-MINUS, FIELD-PLUS, HELP, FIELD-EXIT, HEXADECIMAL and MODE. If specified as '3', sending these keys will cause an Invalid Attention Key error. *See the "Key Table Sequence for VDT/Keyboard Config" for more information*.

7.   Attribute Type

'3', '5' or 'A'. If specifed as '5', 5250 style attributes will returned. 'A' will cause PC Support AS/400 style attributes to be returned. '3' will cause 5250 attributes to be translated to 3270 style attributes. DIALOG requires 3270 style attributes.

8.   SysReq Option

'0' (the default) will cause normal 5250 terminal handling of the SysReq function: an enterable line will be displayed in which the user can enter a command which is sent on the SS-LU flow. In typical AS/400 configurations the user can press enter, sending a null message on the SS-LU flow, in response to which the AS/400 will display the "System Request" menu. '1' will cause the null message to be sent immediately when the SysReq key is hit - this matches the behavior of many 5250 emulators.

9.   Message Line Option

'0' (the default) causes an extra line in the presentation space to be reserved for the error/message line for those terminal models that support a separate message line. '1' will suppress the separate message line when the terminal is in 27x132 mode, and '2' will always suppress the separate message line. When the separate message line is suppressed, the last line (line 24 or 27, depending on the mode) is used.

6.29 MAINCON Panel F1
PC Support AS/400

Configuration filename: MAINCFG.400

Used by cf Device Driver:

#	Name	Description
24	CFX400X	PC Support AS/400

```
 _____   _____   _____
                         |                                   |
                         |    ACROSS-THE-BOARDS(r)  Config    |
                         |_____|

                        ----------  PC Support AS/400  ----------

Host Session letter (A to E)............ A
PC Support API interrupt (in hex)....... 7A
Keyboard Type (3/5)..................... 3
Screen Attribute Type (3/5)............. 3










Enter the Host Session letter of the session to use.


F10: write config to disk   Esc: Exit
```

1. **Host Session**

   Host session is a single upper case letter indicating which session is to be accessed. 'A' through 'E'.

2. **The API Interrupt Number**

   This number for PC Support AS/400 defaults to decimal 122 (hex 7A). If the PC Support AS/400 emulation software has been configured for some other API interrupt number, then that new number must be indicated here.

3. **Keyboard Type**

   '3' or '5'. If specified as '5', the following 5250 keys will be enabled: CMD, ROLL-UP, ROLL-DOWN, FIELD-MINUS, FIELD-PLUS, HELP, FIELD-EXIT, HEXADECIMAL and MODE. If specified as '3', sending these keys will cause an Invalid Attention Key error. *See the Key Table Sequence for VDT/Keyboard Config for more information*.

4. **Attribute Type**

   '3' or '5'. If specifed as '5', 5250 style attributes will returned. '3' will cause 5250 attributes to be translated to 3270 style attributes. DIALOG requires 3270 style attributes.

6.30 **MAINCON Panel F2**
5250, IBM and AST

Configuration filename: MAINCFG.525

Used by cf Device Driver:

#	Name	Description
15	CFX525X	5250 - IBM
19	CFX525A	5250 - AST
79	CFX5253	Special 5250 for S/36 & ES/3270

```
_____        _____        _____
                       |                                |
                       |    ACROSS-THE-BOARDS(r)  Config |
                       |_____|

                        ------------ 5250 Emulation ------------

5250 Station number..................... 0
Keyboard Type (3/5)..................... 3
Screen Attribute Type (3/5)............. 3









Enter the 5250 station address number.


F10: write config to disk   Esc: Exit
```

1. **5250 Station Number**
    Ignored for IBM 5250 (CFX525X). AST 5250 (CFX525A) supports multiple 5250 sessions, this field must match one of the configured AST 5250 "Port Numbers".

2. **Keyboard Type**
    '3' or '5'. If specified as '5', the following 5250 keys will be enabled: CMD, ROLL-UP, ROLL-DOWN, FIELD-MINUS, FIELD-PLUS, HELP, FIELD-EXIT, HEXADECIMAL and MODE. If specified as '3', sending these keys will cause an Invalid Attention Key error. See the "Key Table Sequence for VDT/Keyboard Config" for more information.

3. **Attribute Type**
    '3' or '5'. If specifed as '5', 5250 style attributes will returned. '3' will cause 5250 attributes to be translated to 3270 style attributes. DIALOG requires 3270 style attributes.

6.31 MAINCON Panel F3
5250 HLLAPI

Configuration filename: MAINCFG.H52

Used by cf Device Driver:

#	Name	Description
84	CFXWHL5	Windows WOSA HLLAPI 5250
86	CFXCMG5	OS/2 Comm Mgr 5250
91	CFXRUM5	Rumba/Win16 HLLAPI 5250
92	CFXIRM5	Irma/Win16 HLLAPI 5250
143	CFXIBM53	Personal Communications 5250 (Win32)
145	CFXRUM53	Rumba 5250 (Win32)

```
_____        _____        _____
                        |    ACROSS-THE-BOARDS(r)  Config   |
                        |_____|

                        ------------ 5250 HLLAPI --------------

Host Session letter..................... E
Process EABs............................ N
Trace HLLAPI Calls...................... N
Keyboard Type (3/5)..................... 3
Screen Attribute Type (3/5/A).......... 3











Enter the Host Session letter of the session to use.


F10: write config to disk   Esc: Exit
```

1. **Host Session**

    Host session is a single upper case letter SHORT NAME of the session in multi-host-session environments to be accessed. The default is session E.

    Many HLLAPI interfaces use host session SHORT NAME series beginning with letters other than E. Some even allow single digit numbers as the SHORT NAME. You must configure on a product by product basis for this parameter.

6.31   MAINCON Panel F3, 5250 HLLAPI (continued)

2. Process EABs

Some HLLAPI implementations do not support EABs properly. Specify 'Y' only if you require EABs.
EABs will only be returned if the underlying emulator is configured to return them.

> **NOTES**: The following drivers never return EABs: <none>

> The following drivers return EABs if "Process EABs" is 'Y':

>> 84 - CFXWHL5
>> 86 - CFXCMG5
>> 91 - CFXRUM5
>> 92 - CFXIRM5

The following drivers always return EABs. <none>

3. HLLAPI Trace

Enables a trace of all HLLAPI functions called during the operation of this driver.

4. Keyboard Type

'3' or '5'. If specified as '5', the following 5250 keys will be enabled: CMD, ROLL-UP, ROLL-DOWN,
FIELD-MINUS, FIELD-PLUS, HELP, FIELD-EXIT, HEXADECIMAL and MODE. If specified as '3',
sending these keys will cause an Invalid Attention Key error. *See the Key Table Sequence for
VDT/Keyboard Config for more information*.

5. Attribute Type

'3', '5' or 'A'. If specifed as '5', 5250 style attributes will returned. 'A' will cause PC Support AS/400
style attributes to be returned. '3' will cause 5250 attributes to be translated to 3270 style attributes.
DIALOG requires 3270 style attributes.

6.32 MAINCON Panel G1
Dynacomm Elite LU6.2

Configuration filename: MAINCFG.DE6

Used by cf Device Driver:

#	Name	Description
56	CFX62DE	Dynacomm Elite

```
_____      ┌─────────────────────────────────┐      _____
                      │      ACROSS-THE-BOARDS(r)  Config │
                      └─────────────────────────────────┘

                    --------- Dynacomm Elite LU6.2 ---------

  Trace size in K bytes......... 0000
  Connect timeout (seconds)..... 0000
  Default configuration key..... CONFIG #1


  Configuration Records:
     Key                    Description
     ---                    ---------------------------------------
     CONFIG #1              Sample Configuration #1
     ALT 2                  Alternate Configuration




Enter a non-zero value (4-1000) to enable a diagnostic trace of
the LU6.2 session.
PgDn: Next Page  PgUp: Prior Page  F10: Write config to disk  Esc: Exit
```

1. **Trace Size in K bytes**

    Defines the size of the allocated trace buffer in KB. If zero, the trace is disabled. Otherwise, the trace size can be specified up 63K bytes.

2. **Connect Timeout**

    Defines the time that the driver will wait for the host application to respond to the connect request.

The Dynacomm Elite LU6.2 configuration panels allow for the definition of up to eight configurations for connecting to the host. Each configuration has a "Key" which is used by the application to select which configuration record to use. Also, one of the configurations is marked as the "default", which is used in case the application does not explicitly specify a key.

At least one configuration record must be added, and one of the configuration records must be marked as a default.

To add a new configuration record, tab to the configuration record list and press F2 -- the configuration panel will be displayed. Enter a key and any other required data, then press F10.

To delete a configuration record, tab to that configuration record and press F3.

6.32 <u>MAINCON Panel G1, Dynacomm Elite LU6.2 (continued)</u>

To modify a configuration record, tab to that configuration record and press F4 -- the configuration panel will be displayed. Modify the record as needed, then press F10.

To set the default configuration record, tab to that configuration record and press F5. The key of the current default configuration record is display in the upper part of the panel.

6.32 <u>MAINCON Panel G1, Dynacomm Elite LU6.2 (continued)</u>

```
_____              _____
                    |     ACROSS-THE-BOARDS(r)  Config      |
                    |_____|

                    --------- Dynacomm Elite LU6.2 ---------

  Key......... CONFIG #1
  Description. Sample Configuration #1


  LU Alias.... PCLU
  PLU Alias... CICSAPPL
  Mode Name... #INTER
  PGM.........
  User ID..... JOHN
  Password.... _____
  Sec. Type... 0




Enter 1-16 character key to be used for this configuration record.


F10: Write config file to disk   Esc: Exit to prior menu
```

1. **LU Alias**

   The name of the Alias record in the LU6.2 stack for the local LU to be used for the LU6.2 connection.

2. **PLU Alias**

   The name of the Alias record in the LU6.2 stack for the host LU (APPLID) to connect to.

3. **Mode Name**

   The LU6.2 mode name (often #INTER or #BATCH) to use for the connection.

4. **Host Program**

   The host program the will be executed (the LU6.2 TPN). Not used by APPX or *pcMAINFRAME*.

5. **User ID**

   The user name to use for LU6.2 conversation security.

6. **Password**

   The password name to use for LU6.2 conversation security.

7. **Security Type**

   Type of security information to be included on the bind. 0=Not Set (use LU6.2 default), 1=None, 2=Same, 3=Program.

6.33   MAINCON Panel G2
WinCPIC LU6.2

Configuration filename: MAINCFG.WC6

Used by cf Device Driver:

#	Name	Description
99	CFX62WC	WinCPIC LU6.2 (Win16)
130	CFX62WC3	WinCPIC LU6.2 (Win32)

```
_____        ┌─────────────────────────────────┐      _____
                      │        ACROSS-THE-BOARDS(r)  Config       │
                      └─────────────────────────────────┘

                    ----------  WinCPIC LU6.2 -------------

  Trace size in K bytes......... 0000
  Connect timeout (seconds)..... 0000
  Default configuration key..... CONFIG #1


  Configuration Records:
      Key                     Description
      ---                     ----------------------------------------
      CONFIG #1               Sample Configuration #1
      ALT 2                   Alternate Configuration




Enter a non-zero value (4-1000) to enable a diagnostic trace of
the LU6.2 session.
PgDn: Next Page  PgUp: Prior Page  F10: Write config to disk  Esc: Exit
```

1. **Trace Size in K bytes**
    Defines the size of the allocated trace buffer in KB. If zero, the trace is disabled. Otherwise, the trace size can be specified up 63K bytes.

2. **Connect Timeout**
    Defines the time that the driver will wait for the host application to respond to the connect request.

The WinCPIC LU6.2 configuration panels allow for the definition of up to eight configurations for connecting to the host. Each configuration has a "Key" which is used by the application to select which configuration record to use. Also, one of the configurations is marked as the "default", which is used in case the application does not explicitly specify a key.

At least one configuration record must be added, and one of the configuration records must be marked as a default.

To add a new configuration record, tab to the configuration record list and press F2 -- the configuration panel will be displayed. Enter a key and any other required data, then press F10.

To delete a configuration record, tab to that configuration record and press F3.

6.33   MAINCON Panel G2, WinCPIC LU6.2 (continued)

To modify a configuration record, tab to that configuration record and press F4 -- the configuration panel will be displayed. Modify the record as needed, then press F10.

To set the default configuration record, tab to that configuration record and press F5. The key of the current default configuration record is display in the upper part of the panel.

6.33   MAINCON Panel G2, WinCPIC LU6.2 (continued)

```
 _____        ┌──────────────────────────────────┐        _____
                         │      ACROSS-THE-BOARDS(r)  Config │
                         └──────────────────────────────────┘

                        ----------- WinCPIC LU6.2 -------------
 Key......... CONFIG #1
 Description. Sample Configuration #1


 PLU Alias... CICSAPPL
 Mode Name... #INTER
 PGM.........
 Side Info... SI1
 User ID..... JOHN
 Password.... _____
 Sec. Type... 0



Enter 1-16 character key to be used for this configuration record.


F10: Write config file to disk   Esc: Exit to prior menu
```

1. **PLU Alias**

   The name of the Alias record in the LU6.2 stack for the host LU (APPLID) to connect to.

2. **Mode Name**

   The LU6.2 mode name (often #INTER or #BATCH) to use for the connection.

3. **Host Program**

   The host program the will be executed (the LU6.2 TPN). Not used by APPX or *pcMAINFRAME*.

4. **Side Info Name**

   The name of the CPIC Side Info record to use for the connection.

5. **User ID**

   The user name to use for LU6.2 conversation security.

6. **Password**

   The password name to use for LU6.2 conversation security.

7. **Security Type**

   Type of security information to be included on the bind. 0=Not Set (use setting from Side Info), 1=None, 2=Same, 3=Program.

6.34 MAINCON Panel G3
Personal Comm LU6.2 NT/95

Configuration filename: MAINCFG.NS7

Used by cf Device Driver:

#	Name	Description
133	CFX62NS3	PCOM/Network Services for Win32 CPIC

```
_____        _____        _____
                        |     ACROSS-THE-BOARDS(r)  Config     |
                        |_____|

                        ------ Personal Comm LU6.2 NT/95 -------

  Trace size in K bytes......... 0000
  Connect timeout (seconds)..... 0000
  Default configuration key..... CONFIG #1


  Configuration Records:
      Key                    Description
      ---                    ---------------------------------------
      CONFIG #1              Sample Configuration #1
      ALT 2                  Alternate Configuration




Enter a non-zero value (4-1000) to enable a diagnostic trace of
the LU6.2 session.
PgDn: Next Page  PgUp: Prior Page  F10: Write config to disk  Esc: Exit
```

1. **Trace Size in K bytes**
   Defines the size of the allocated trace buffer in KB. If zero, the trace is disabled. Otherwise, the trace size can be specified up 63K bytes.

2. **Connect Timeout**
   Defines the time that the driver will wait for the host application to respond to the connect request.

The Personal Comm LU6.2 NT/95 configuration panels allow for the definition of up to eight configurations for connecting to the host. Each configuration has a "Key" which is used by the application to select which configuration record to use. Also, one of the configurations is marked as the "default", which is used in case the application does not explicitly specify a key.

At least one configuration record must be added, and one of the configuration records must be marked as a default.

To add a new configuration record, tab to the configuration record list and press F2 -- the configuration panel will be displayed. Enter a key and any other required data, then press F10.

To delete a configuration record, tab to that configuration record and press F3.

6.34   MAINCON Panel G3, Personal Comm LU6.2 NT/95 (continued)

To modify a configuration record, tab to that configuration record and press F4 — the configuration panel will be displayed. Modify the record as needed, then press F10.

To set the default configuration record, tab to that configuration record and press F5. The key of the current default configuration record is display in the upper part of the panel.

6.34 <u>MAINCON Panel G3, Personal Comm LU6.2 NT/95 (continued)</u>

```
_____        ┌────────────────────────────────┐        _____
                          │       ACROSS-THE-BOARDS(r)  Config        │
                          └────────────────────────────────┘

                          ------ Personal Comm LU6.2 NT/95 -------
  Key......... CONFIG #1
  Description. Sample Configuration #1


  PLU Alias... CICSAPPL
  Mode Name... #INTER
  PGM.........
  Side Info... SI1
  User ID..... JOHN
  Password.... _____
  Sec. Type... 0



Enter 1-16 character key to be used for this configuration record.


F10: Write config file to disk   Esc: Exit to prior menu
```

1. **PLU Alias**

   The name of the Alias record in the LU6.2 stack for the host LU (APPLID) to connect to.

2. **Mode Name**

   The LU6.2 mode name (often #INTER or #BATCH) to use for the connection.

3. **Host Program**

   The host program the will be executed (the LU6.2 TPN). Not used by APPX or *pcMAINFRAME*.

4. **Side Info Name**

   The name of the CPIC Side Info record to use for the connection.

5. **User ID**

   The user name to use for LU6.2 conversation security.

6. **Password**

   The password name to use for LU6.2 conversation security.

7. **Security Type**

   Type of security information to be included on the bind. 0=Not Set (use setting from Side Info), 1=None, 2=Same, 3=Program.

6.35   MAINCON Panel G4
Extra! LU6.2 NT/95

Configuration filename: MAINCFG.EP7

Used by cf Device Driver:

#	Name	Description
134	CFX62EP3	Extra! for Win32 CPIC

```
 _____   ┌─────────────────────────────────┐   _____
                       │      ACROSS-THE-BOARDS(r)  Config │
                       └─────────────────────────────────┘

                       ---------- Extra! LU6.2 NT/95 ----------

   Trace size in K bytes......... 0000
   Connect timeout (seconds)..... 0000
   Default configuration key..... CONFIG #1


   Configuration Records:
        Key                     Description
        ---                     ----------------------------------------
        CONFIG #1               Sample Configuration #1
        ALT 2                   Alternate Configuration




 Enter a non-zero value (4-1000) to enable a diagnostic trace of
 the LU6.2 session.
 PgDn: Next Page  PgUp: Prior Page  F10: Write config to disk  Esc: Exit
```

1. **Trace Size in K bytes**

    Defines the size of the allocated trace buffer in KB. If zero, the trace is disabled. Otherwise, the trace size can be specified up 63K bytes.

2. **Connect Timeout**

    Defines the time that the driver will wait for the host application to respond to the connect request.

The Extra! LU6.2 NT/95 configuration panels allow for the definition of up to eight configurations for connecting to the host. Each configuration has a "Key" which is used by the application to select which configuration record to use. Also, one of the configurations is marked as the "default", which is used in case the application does not explicitly specify a key.

At least one configuration record must be added, and one of the configuration records must be marked as a default.
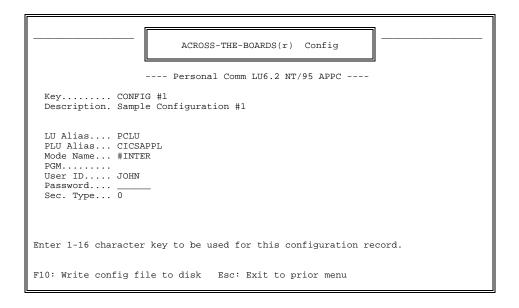
To add a new configuration record, tab to the configuration record list and press F2 -- the configuration panel will be displayed. Enter a key and any other required data, then press F10.

To delete a configuration record, tab to that configuration record and press F3.

6.35   MAINCON Panel G4, Extra! LU6.2 NT/95 (continued)

To modify a configuration record, tab to that configuration record and press F4 -- the configuration panel will be displayed. Modify the record as needed, then press F10.

To set the default configuration record, tab to that configuration record and press F5. The key of the current default configuration record is display in the upper part of the panel.

6.35 MAINCON Panel G4, Extra! LU6.2 NT/95 (continued)

```
_____          _____          _____
                        |                                |
                        |    ACROSS-THE-BOARDS(r)  Config |
                        |_____|

                        ---------- Extra! LU6.2 NT/95 ----------

  Key......... CONFIG #1
  Description. Sample Configuration #1


  PLU Alias... CICSAPPL
  Mode Name... #INTER
  PGM.........
  Side Info... SI1
  User ID..... JOHN
  Password.... _____
  Sec. Type... 0




Enter 1-16 character key to be used for this configuration record.


F10: Write config file to disk   Esc: Exit to prior menu
```

1. **PLU Alias**

    The name of the Alias record in the LU6.2 stack for the host LU (APPLID) to connect to.

2. **Mode Name**

    The LU6.2 mode name (often #INTER or #BATCH) to use for the connection.

3. **Host Program**

    The host program the will be executed (the LU6.2 TPN). Not used by APPX or *pcMAINFRAME*.

4. **Side Info Name**

    The name of the CPIC Side Info record to use for the connection.

5. **User ID**

    The user name to use for LU6.2 conversation security.

6. **Password**

    The password name to use for LU6.2 conversation security.

7. **Security Type**

    Type of security information to be included on the bind. 0=Not Set (use setting from Side Info), 1=None, 2=Same, 3=Program.

6.36 MAINCON Panel G5
Rumba LU6.2 NT/95

Configuration filename: MAINCFG.RU7

Used by cf Device Driver:

#	Name	Description
135	CFX62RU3	Rumba for Win32 CPIC

```
_____      ┌─────────────────────────────────┐   _____
                        │       ACROSS-THE-BOARDS(r)  Config │
                        └─────────────────────────────────┘

                          ---------- Rumba LU6.2 NT/95 -----------
 Trace size in K bytes......... 0000
 Connect timeout (seconds)..... 0000
 Default configuration key..... CONFIG #1


 Configuration Records:
     Key                     Description
     ---                     ---------------------------------------
     CONFIG #1               Sample Configuration #1
     ALT 2                   Alternate Configuration




Enter a non-zero value (4-1000) to enable a diagnostic trace of
the LU6.2 session.
PgDn: Next Page  PgUp: Prior Page  F10: Write config to disk  Esc: Exit
```

1. **Trace Size in K bytes**

   Defines the size of the allocated trace buffer in KB. If zero, the trace is disabled. Otherwise, the trace size can be specified up 63K bytes.

2. **Connect Timeout**

   Defines the time that the driver will wait for the host application to respond to the connect request.

The Rumba LU6.2 NT/95 configuration panels allow for the definition of up to eight configurations for connecting to the host. Each configuration has a "Key" which is used by the application to select which configuration record to use. Also, one of the configurations is marked as the "default", which is used in case the application does not explicitly specify a key.

At least one configuration record must be added, and one of the configuration records must be marked as a default.

To add a new configuration record, tab to the configuration record list and press F2 -- the configuration panel will be displayed. Enter a key and any other required data, then press F10.

To delete a configuration record, tab to that configuration record and press F3.

6.36 MAINCON Panel G5, Rumba LU6.2 NT/95 (continued)

To modify a configuration record, tab to that configuration record and press F4 -- the configuration panel will be displayed. Modify the record as needed, then press F10.

To set the default configuration record, tab to that configuration record and press F5. The key of the current default configuration record is display in the upper part of the panel.

6.36 <u>MAINCON Panel G5, Rumba LU6.2 NT/95 (continued)</u>

```
 _____         ┌─────────────────────────────┐        _____
                             │      ACROSS-THE-BOARDS(r)  Config      │
                             └─────────────────────────────┘

                        ---------- Rumba LU6.2 NT/95 -----------
 Key......... CONFIG #1
 Description. Sample Configuration #1


 PLU Alias... CICSAPPL
 Mode Name... #INTER
 PGM.........
 Side Info... SI1
 User ID..... JOHN
 Password.... _____
 Sec. Type... 0



Enter 1-16 character key to be used for this configuration record.


F10: Write config file to disk   Esc: Exit to prior menu
```

1. **PLU Alias**
   The name of the Alias record in the LU6.2 stack for the host LU (APPLID) to connect to.

2. **Mode Name**
   The LU6.2 mode name (often #INTER or #BATCH) to use for the connection.

3. **Host Program**
   The host program the will be executed (the LU6.2 TPN). Not used by APPX or *pcMAINFRAME*.

4. **Side Info Name**
   The name of the CPIC Side Info record to use for the connection.

5. **User ID**
   The user name to use for LU6.2 conversation security.

6. **Password**
   The password name to use for LU6.2 conversation security.

7. **Security Type**
   Type of security information to be included on the bind. 0=Not Set (use setting from Side Info), 1=None, 2=Same, 3=Program.

6.37   MAINCON Panel G6
WinAPPC LU6.2

Configuration filename: MAINCFG.SS7

Used by cf Device Driver:

#	Name	Description
137	CFX62SS3	SNA Server APPC Driver (Win32)

```
_____        ┌──────────────────────────────────┐       _____
                         │       ACROSS-THE-BOARDS(r)  Config │
                         └──────────────────────────────────┘

                          ----------  WinAPPC LU6.2 -------------

      Trace size in K bytes......... 0000
      Connect timeout (seconds)..... 0000
      Default configuration key..... CONFIG #1


      Configuration Records:
          Key                     Description
          ---                     ----------------------------------------
          CONFIG #1               Sample Configuration #1
          ALT 2                   Alternate Configuration




   Enter a non-zero value (4-1000) to enable a diagnostic trace of
   the LU6.2 session.
   PgDn: Next Page  PgUp: Prior Page  F10: Write config to disk  Esc: Exit
```

1. **Trace Size in K bytes**

   Defines the size of the allocated trace buffer in KB. If zero, the trace is disabled. Otherwise, the trace size can be specified up 63K bytes.

2. **Connect Timeout**

   Defines the time that the driver will wait for the host application to respond to the connect request.

The Dynacomm Elite LU6.2 configuration panels allow for the definition of up to eight configurations for connecting to the host. Each configuration has a "Key" which is used by the application to select which configuration record to use. Also, one of the configurations is marked as the "default", which is used in case the application does not explicitly specify a key.

At least one configuration record must be added, and one of the configuration records must be marked as a default.

To add a new configuration record, tab to the configuration record list and press F2 -- the configuration panel will be displayed. Enter a key and any other required data, then press F10.

To delete a configuration record, tab to that configuration record and press F3.

6.37   <u>MAINCON Panel G6, WinAPPC LU6.2 (continued)</u>

To modify a configuration record, tab to that configuration record and press F4 -- the configuration panel will be displayed. Modify the record as needed, then press F10.

To set the default configuration record, tab to that configuration record and press F5. The key of the current default configuration record is display in the upper part of the panel.

6.37   MAINCON Panel G6, WinAPPC LU6.2 (continued)

```
_____        ACROSS-THE-BOARDS(r)  Config        _____


                  ----------- WinAPPC LU6.2 -------------
  Key......... CONFIG #1
  Description. Sample Configuration #1


  LU Alias.... PCLU
  PLU Alias... CICSAPPL
  Mode Name... #INTER
  PGM.........
  User ID..... JOHN
  Password.... _____
  Sec. Type... 0




Enter 1-16 character key to be used for this configuration record.


F10: Write config file to disk   Esc: Exit to prior menu
```

1. **LU Alias**

   The name of the Alias record in the LU6.2 stack for the local LU to be used for the LU6.2 connection.

2. **PLU Alias**

   The name of the Alias record in the LU6.2 stack for the host LU (APPLID) to connect to.

3. **Mode Name**

   The LU6.2 mode name (often #INTER or #BATCH) to use for the connection.

4. **Host Program**

   The host program the will be executed (the LU6.2 TPN). Not used by APPX or *pcMAINFRAME*.

5. **User ID**

   The user name to use for LU6.2 conversation security.

6. **Password**

   The password name to use for LU6.2 conversation security.

7. **Security Type**

   Type of security information to be included on the bind. 0=Not Set (use LU6.2 default), 1=None, 2=Same, 3=Program.

6.38   MAINCON Panel G7
Personal Comm LU6.2 NT/95 APPC

Configuration filename: MAINCFG.IB7

Used by cf Device Driver:

#	Name	Description
138	CFX62IB3	IBM PCOM APPC Driver (Win32)

```
  _____   _____   _____
                       |                                  |
                       |     ACROSS-THE-BOARDS(r)  Config  |
                       |_____|


                        ---- Personal Comm LU6.2 NT/95 APPC ----

   Trace size in K bytes......... 0000
   Connect timeout (seconds)..... 0000
   Default configuration key..... CONFIG #1


   Configuration Records:
        Key                     Description
        ---                     ----------------------------------------
        CONFIG #1               Sample Configuration #1
        ALT 2                   Alternate Configuration




Enter a non-zero value (4-1000) to enable a diagnostic trace of
the LU6.2 session.
PgDn: Next Page  PgUp: Prior Page  F10: Write config to disk  Esc: Exit
```

1. **Trace Size in K bytes**

   Defines the size of the allocated trace buffer in KB. If zero, the trace is disabled. Otherwise, the trace size can be specified up 63K bytes.

2. **Connect Timeout**

   Defines the time that the driver will wait for the host application to respond to the connect request.

The Dynacomm Elite LU6.2 configuration panels allow for the definition of up to eight configurations for connecting to the host. Each configuration has a "Key" which is used by the application to select which configuration record to use. Also, one of the configurations is marked as the "default", which is used in case the application does not explicitly specify a key.

At least one configuration record must be added, and one of the configuration records must be marked as a default.

To add a new configuration record, tab to the configuration record list and press F2 -- the configuration panel will be displayed. Enter a key and any other required data, then press F10.

To delete a configuration record, tab to that configuration record and press F3.

6.38   MAINCON Panel G7, Personal Comm LU6.2 NT/95 APPC (continued)

To modify a configuration record, tab to that configuration record and press F4 -- the configuration panel will be displayed. Modify the record as needed, then press F10.

To set the default configuration record, tab to that configuration record and press F5. The key of the current default configuration record is display in the upper part of the panel.

6.38 <u>MAINCON Panel G7, Personal Comm LU6.2 NT/95 APPC (continued)</u>

```
_____        _____        _____
                       │    ACROSS-THE-BOARDS(r)  Config    │
                       └────────────────────────────────────┘

                       ---- Personal Comm LU6.2 NT/95 APPC ----

 Key......... CONFIG #1
 Description. Sample Configuration #1


 LU Alias.... PCLU
 PLU Alias... CICSAPPL
 Mode Name... #INTER
 PGM.........
 User ID..... JOHN
 Password.... _____
 Sec. Type... 0



Enter 1-16 character key to be used for this configuration record.


F10: Write config file to disk   Esc: Exit to prior menu
```

1. **LU Alias**

   The name of the Alias record in the LU6.2 stack for the local LU to be used for the LU6.2 connection.

2. **PLU Alias**

   The name of the Alias record in the LU6.2 stack for the host LU (APPLID) to connect to.

3. **Mode Name**

   The LU6.2 mode name (often #INTER or #BATCH) to use for the connection.

4. **Host Program**

   The host program the will be executed (the LU6.2 TPN). Not used by APPX or *pcMAINFRAME*.

5. **User ID**

   The user name to use for LU6.2 conversation security.

6. **Password**

   The password name to use for LU6.2 conversation security.

7. **Security Type**

   Type of security information to be included on the bind. 0=Not Set (use LU6.2 default), 1=None, 2=Same, 3=Program.

6.39 MAINCON Panel X1
CFMPIPE Driver

Configuration filename: MAINCFG.CMP

Used by cf Device Driver:

#	Name	Description
149	CFXCFMP3	CFMP Driver for TPNS Handling

```
_____      ┌─────────────────────────────────┐      _____
                          │        ACROSS-THE-BOARDS(r)  Config │
                          └─────────────────────────────────┘

                          ----------- cfMEMPIPE Driver -----------
Trace size in K bytes................... 0
Connect timeout (seconds).............. 30












Enter a non-zero value (4-1000) to enable a diagnostic trace of the cfMEMPIPE
session.

F10: write config to disk   Esc: Exit
```

1. **Trace Size in K bytes**

    Defines the size of the allocated trace buffer in KB. If zero, the trace is disabled. Otherwise, the trace size can be specified up 1000K bytes (the exact size limit is environment specific, and the trace size will be adjusted down as needed).

2. **Connect Timeout**

    Defines the default connect timeout.

Section 7 - Miscellaneous Topics

7.1   Rational Systems DOS Extender

This DOS extender has been used to implement ATB/DOS in a environment where the application is in protected mode, and the ATB modules are loaded in real mode with a mode switch occuring under the applications control. A problem is that Rational Systems DOS Extender makes the switch and leaves interrupts **disabled**. This causes the VTIC calibrate to hang. The application **must** insure that interrupts are enabled before calling ATB modules.

7.2   WATCOM C

The WATCOM C compiler does not, by default, use standard Microsoft C calling conventions. It can be forced
to generate MS C style calls on a routine-by-routine basis, however. The following pragmas should be added
before the function prototypes that they modify:

```
#pragma aux MS_C "_*"  \
        parm caller [ ]  \
        value struct float routine [ax]  \
        modify [ax bx cx dx es];
#pragma aux (MS_C)      cfxappx;
#pragma aux (MS_C)      cfxapi;
#pragma aux (MS_C)      cfxdial;


#include <cfxappxi.h>
#include <cfxapii.h>
#include <cfxdiali.h>
```

7.3   <u>Language Translation Considerations</u>

The following known peculiarities exist with regard to APPX's internal "variable 10" and the "extras".

1. Languages 4, 5, 7, and S (German, Italian, Brazilian, and Finnish/Swedish) include the carat (^ ASCII 5EH) in their Var-10. This character is generally mistranslated by Cut-mode drivers to a not sign (ª ASCII AAH). This is likely to be common with HLLAPI-based configurations also.

    This mistranslation does not occur with the new DFT driver (released with APPX Version 3.09), which loads cfSOFTWARE-created code page tables of its own when it is loaded. These tables deal with carat/not sign correctly, based on the configured language.

    The only ramification of this difference is the possible mistranslation of the carat symbol to the logical not for upstream text transfers. (Circumvention: text translate tables.)

2. Some languages have var10/extras which are not included in the venerable national use group. (*Consult Version 3.09 APPX manual Appendix I, "APPX Text Records" for these.*)

    These characters are particularly prone to mistranslation, especially on older controllers, or when the controller is not configured for the same language as APPX.

<u>Symptoms of Mistranslation</u>

-   connect failure detected by either peer (e.g., "GOT DUP CHAR", or "INVALID HANDSHAKE").
-   successful transfer, but with variable-10 or extra characters mistranslated on target system.
-   successful handshake, but incomplete transfer due to CRC failure in the midst of the run (text transfers only). This form of failure should only occur on APPX systems where one or both peers are < 3.09, and where the mistranslated character becomes a space.

The last of these is the most serious since large transfers may be well under way or nearly completed and then fail. The CRC failure occurs when the data block contains characters in the extra group which are mistranslated.

Version 3.09 APPX should deal properly with var10/extras that mistranslate to blanks (both sides must be >= 3.09). It will detect this at connect and:

   1) the connect will fail, or
   2) we will drop to dirty mode.

7.4   Year 2000 Date Handling in Across the Boards

Correct handling of the century change in 1999/2000 is a concern to many mainframe installations. *Across the Boards* has few date dependencies, and applications will have few, if any, problems with the year 2000 related to *Across the Boards*. The date handling in the various *Across the Boards* modules is summarized below.

XAPI

No date dependencies.

DIALOG/CFXDIAL/DIALOGG/CFXDIALG

All date handling uses four digit years.

APPX

At connect time, the mainframe APPX transmits the mainframe's current date and time to the PC APPX. Both the mainframe and PC APPX return this date and time to their respective applications. The transmitted and returned dates use a two digit year. Since this date is intended primarily to allow the recording of a common session start time on both the mainframe and PC (for logging and debugging purposes), it is not expected that the two digit year will have a significant impact on any applications.

APPX has no other date dependencies.

7.5   MAINCON ASCII Characters

Several configuration panels in MAINCON allow the coding of strings of ASCII character sequences. In these locations MAINCON accepts several types of entries:

- Displayable characters
- Control characters
- Hex values
- ASCII Mnemonics
- "BRK" (see description)

There is more than one possible coding for each ASCII character. For example, an uppercase 'A' can be coded as the displable character 'A' or as the hex value '41H'. The value entered in each field might not be displayed in the same form as it was entered. For example, if '41H' were entered, MAINCON would display it as 'A'.

> **NOTE**: older versions of MAINCON require that control characters, hex values and ASCII mnemonics be entered in uppercase.

Displayable Characters

Displayable characters include the normal printable characters found on the keyboard. For example, 'A'-'Z', 'a'-'z', '0'-'9' and the punctuation characters are all displayable characters.

> **NOTE**: A space must be entered as the mnemonic 'SP'

7.5   MAINCON ASCII Characters (continued)

Control Characters

The ASCII characters in the range 01h through 1Fh have standard control character assignments. For example, pressing "Ctrl-A" on the keyboard generates an ASCII 01H character. A control character may be entered by prefixing the displayable character with a "^". For example, "Ctrl-A" would be coded as "^A". The following control characters are recognized by MAINCON:

Control Character	Decimal	Hex	Control Character	Decimal	Hex
^A	1	01h	^Q	17	11h
^B	2	02h	^R	18	12h
^C	3	03h	^S	19	13h
^D	4	04h	^T	20	14h
^E	5	05h	^U	21	15h
^F	6	06h	^V	22	16h
^G	7	07h	^W	23	17h
^H	8	08h	^X	24	18h
^I	9	09h	^Y	25	19h
^J	10	0Ah	^Z	26	1Ah
^K	11	0Bh	^[	27	1Bh
^L	12	0Ch	^\	28	1Ch
^M	13	0Dh	^]	29	1Dh
^N	14	0Eh	^^	30	1Eh
^O	15	0Fh	^-	31	1Fh
^P	16	10h			

Hex Values

Hexadecimal values may be entered as '00H' through 'FFH'.

7.5   MAINCON ASCII Characters (continued)

ASCII Mnemonics

The following ASCII Mnemonics are accepted by MAINCON:

Mnemonic(s)	Decimal	Hex	Mnemonic(s)	Decimal	Hex
NUL	0	00h	RS	30	1Eh
SOH	1	01h	US	31	1Fh
STX	2	02h	SP	32	20h
ETX	3	03h	DEL	127	7Fh
EOT	4	04h	IND	132	84h
ENQ	5	05h	NEL	133	85h
ACK	6	06h	SSA	134	86h
BEL	7	07h	ESA	135	87h
BS	8	08h	HTS	136	88h
TAB/HT	9	09h	HTJ	137	89h
LF	10	0Ah	VTS	138	8Ah
VT	11	0Bh	PLD	139	8Bh
FF	12	0Ch	PLU	140	8Ch
CR	13	0Dh	RI	141	8Dh
SO	14	0Eh	SS2	142	8Eh
SI	15	0Fh	SS3	143	8Fh
DLE	16	10h	DCS	144	90h
XON/DC1	17	11h	PU1	145	91h
DC2	18	12h	PU2	146	92h
XOF/DC3	19	13h	STS	147	93h
DC4	20	14h	MW	149	95h
NAK	21	15h	SPA	150	96h
SYN	22	16h	EPA	151	97h
ETB	23	17h	CSI	155	9Bh
CAN	24	18h	ST	156	9Ch
EM	25	19h	OSC	157	9Dh
SUB	26	1Ah	PM	158	9Eh
ESC	27	1Bh	APC	159	9Fh
FS	28	1Ch	BRK	255	FFh
GS	29	1Dh			

"BRK"

For some drivers it is possible to code "BRK" in a character string associated with a 3270 key, usually as the the first character. When this is allowed, and it is coded, a serial line break is sent for that key instead of a character sequence.

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